COLLEGE AND UNIVERSITY INVESTMENT POOL RETURNS

FISCAL YEAR 2022

CAMBRIDGE ASSOCIATES

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SIDEBAR

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This study is based on a survey that Cambridge Associates (CA) administers annually to our college and university clients. The report that follows summarizes returns, asset allocation, and other investment-related data for 158 institutions for the fiscal year ended June 30, 2022. Included in this year's report are commentary and exhibits that are spread across six separate sections.

Just one year after the best investment returns endowments had seen in decades, fiscal year 2022 brought about the most challenging market environment since the Global Financial Crisis (GFC) of the late 2000s. Our **INVESTMENT PORTFOLIO RETURNS** section highlights performance results for this past fiscal year, as well as longer trailing periods. This section includes our usual suite of analysis that investigates the drivers of investment performance and what made top performers stand out. Also included is commentary on private investment reporting methodologies and why this topic is particularly critical in the analysis of comparative peer returns reported this past fiscal year.

Despite the poor returns earned on an absolute basis in fiscal year 2022, many endowments performed quite well in relation to their policy portfolio benchmark. However, the composition of the benchmark, notably when it comes to how private equity is captured, was a significant factor in whether or not an endowment outperformed its benchmark and by how much. Our **INVESTMENT POLICY** section touches on this topic and illustrates the most common components used for policy benchmarks. Relatedly, this section also includes insights into how asset allocation strategies among endowments can differ from a policy perspective.

CA has been conducting this survey for several decades and this gives us unique insights into trends in asset allocations over the long term. The **PORTFOLIO ASSET ALLOCATION** section highlights how endowments have evolved in investing their portfolios from the early 2000s to today, with a particular focus on the increased equity exposure that endowments have taken on in recent years. This section also incorporates data on target asset allocations to lend insights into how institutions are altering their portfolios heading into the future.

The number of managers that endowments use for their overall portfolio and within specific asset classes can vary widely. Our **INVESTMENT MANAGER STRUCTURES** section explores data on this topic, as well as implementation strategies for traditional assets (i.e., active versus passive management) and alternative assets.

Meanwhile, the **INSTITUTIONAL SUPPORT** section contains analyses that highlight how much colleges and universities rely on their endowments to support their annual operating budgets. Also included in this section are exhibits on spending policies, portfolio inflows and outflows, operating funds, and endowment market values relative to outstanding debt.

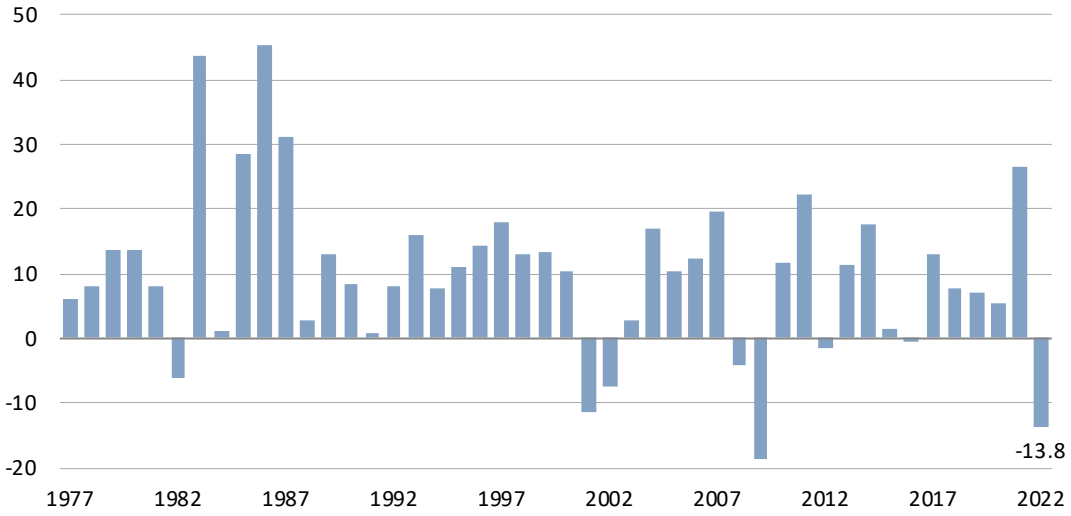
Finally, our **INVESTMENT OFFICE STAFFING AND GOVERNANCE** section of the report takes a look at topics such as the number of personnel in the investment office and investment committee structure. Also included are analyses on how endowments use outside advisors/consultants and who has decision rights for asset allocation policy development and manager selection.

Section 1: Investment Portfolio Returns

RETURNS IN FISCAL YEAR 2022

The first half of the fiscal year saw public equity markets in many countries, including the United States, continuing to push toward new highs. However, the market environment changed swiftly during the second half of the year as central banks raised interest rates in response to high inflation. As a result, the global equity market, represented by the MSCI All Country World Index, ended up with its worst year performance-wise since the GFC of the late 2000s. Bonds fared even worse compared to historical standards, as 2022 was the lowest returning fiscal year across the entire history of the Bloomberg Aggregate Bond Index, which was incepted in 1976. A simple benchmark consisting of 70% global equities and 30% bonds produced the second-worst return in fiscal year 2022 across this historical period (Figure 1).

FIGURE 1 TRAILING 1-YR RETURNS FOR 70% EQUITY/30% BOND BENCHMARK
Fiscal Years 1977–2022 • Periods Ended June 30



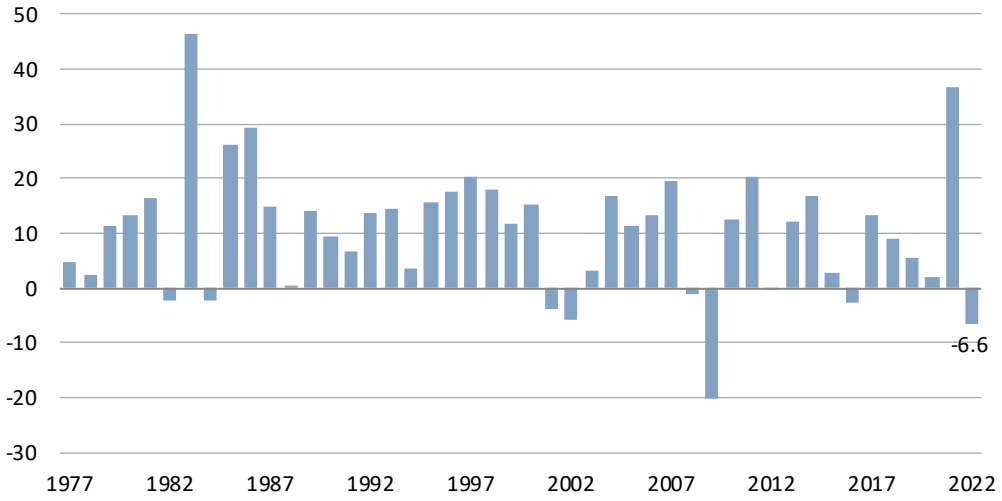
Sources: Index data are provided by Bloomberg Index Services Limited and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Notes: The equity component of the benchmark is represented by the MSCI World Index (Gross) from 7/1/76 through 12/31/87; the MSCI ACWI (Gross) from 1/1/88 through 9/30/01; and the MSCI ACWI w/ USA Gross from 10/1/01 through present day. The bond component is represented by the Bloomberg Aggregate Bond Index for the entire historical series.

This was the broad market backdrop that college and university endowments had to work with in fiscal year 2022. It was a strikingly different environment compared to the previous year, when the median endowment return was the second *highest* calculated across the four-plus decades that CA has been collecting performance data. For fiscal year 2022, the median return for participating institutions landed at -6.6%, which was the second *lowest* fiscal year return reported across the 45-year historical period displayed in Figure 2.

FIGURE 2 TRAILING 1-YR MEDIAN RETURNS

Fiscal Years 1977–2022 • Periods Ended June 30



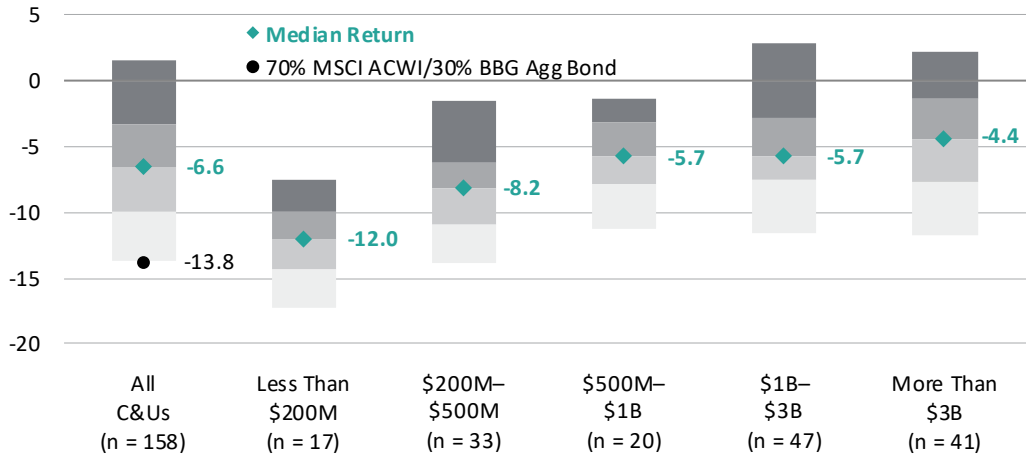
Source: College and university data as reported to Cambridge Associates LLC.

Note: The number of institutions included in the median calculation varies from one period to the next, ranging from 37 in 1977 to 158 in 2022.

For the second straight year, the median participant return was significantly higher than the 70/30 benchmark return. In fact, the simple benchmark return was lower than the 95th percentile ranking of the overall CA College and University (C&U) universe and would have landed in the bottom performance quartile for four of the five asset size subgroups in Figure 3. Among these various size cohorts, endowments with assets greater than $3 billion reported the highest median return at -4.4%. Meanwhile, those with assets less than $200 million reported a median return that was substantially lower at -12.0%. Within each of the asset size subgroups, the range of returns from the top end of the distribution (5th percentile) to the bottom end (95th percentile) was 10 percentage points (ppts) or wider.

FIGURE 3 FISCAL YEAR 2022 TOTAL RETURN PERCENTILES

Trailing 1-Yr as of June 30, 2022 • Percent (%) • By Percentile Ranking



Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Note: For more information, see page 66 in the Appendix.

PERCENTILE RANKINGS

The percentile rankings in our analysis are in ascending order so that the highest figure in the data set is 0 and the lowest figure is 100. The graphs throughout this report that show a range of data are organized to highlight various percentile breaks as displayed here.

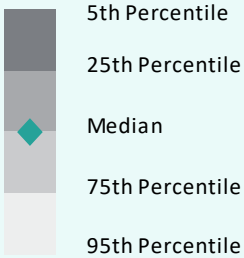
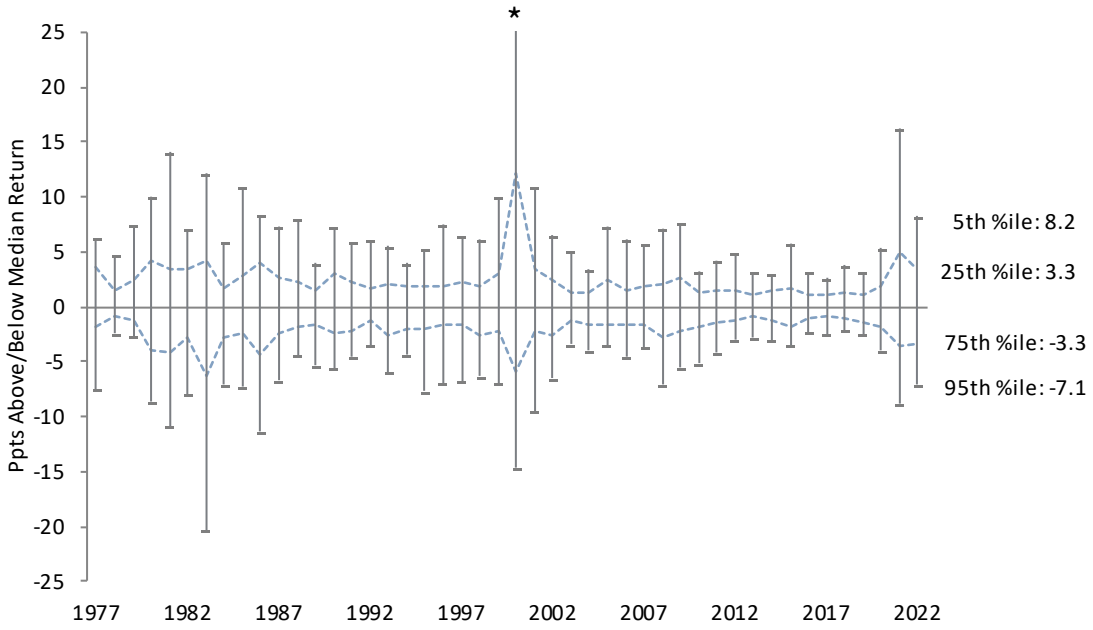


Figure 4 looks at the dispersion in returns across our C&U universe for individual fiscal years going back to 1977. After a period of relatively smaller variations in returns during the 2010s, the level of dispersion spiked dramatically in fiscal year 2021. The overall range in returns trended back down in 2022 but remained elevated compared to the experience of the previous decade. The 5th percentile return (1.6%) was 8.2 ppts higher than the median return in 2022. The level of dispersion was similar in the lower half of the universe as the 95th percentile return (-13.7%) was 7.1 ppts lower than the median mark.

FIGURE 4 DISPERSION IN TRAILING 1-YR RETURNS RELATIVE TO THE MEDIAN RETURN
Fiscal Years 1977–2022 • Periods Ended June 30



*The graph scaling is capped at +/- 25 for display purposes. The 5th percentile return in 2000 was 34.3 ppts higher than the median return.

Source: College and university data as reported to Cambridge Associates LLC.

IMPACT OF PERFORMANCE REPORTING METHODOLOGIES ON PEER COMPARISONS

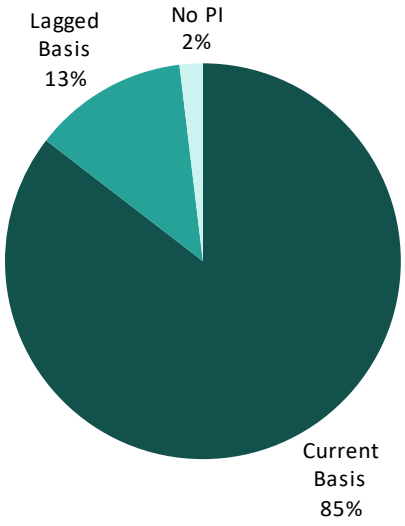
Because of the illiquid nature of private investments, valuations of these assets are not readily available following the end of a quarter. It can take several months for managers to report valuations, which delays the timing for when an endowment can calculate a fiscal year return with June 30 private marks. Some institutions must close out their investment reporting shortly after fiscal year end, while others have

the flexibility to wait until later in the fall to calculate their final fiscal year return. Consequently, the methodology for capturing private investments in the total portfolio return is not apples to apples across all endowments.

Endowments using the lagged methodology mark private investments as of March 31 when the fiscal year return is reported. Private valuations are perpetually lagged by one quarter under this method, resulting in a fiscal year return that captures private investment performance from April 1, 2021, to March 31, 2022. Just 13% of participants in this study used the lagged basis for their fiscal year return calculation. In contrast, the majority of participants (85%) in this study incorporated private investment marks into the fiscal year total return on a current basis (Figure 5). For these endowments, private investment performance is time-matched with the actual trailing one-year period and reflects investment activity from July 1, 2021, to June 30, 2022.

FIGURE 5 PERFORMANCE REPORTING METHODOLOGIES: PRIVATE INVESTMENTS
As of June 30, 2022

All Colleges and Universities



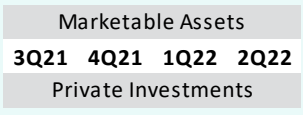
C&Us By Asset Size

	Current Basis	Lagged Basis	No PI Allocation
Less Than $200M	82%	—	18%
n	*14*		*3*
$200M–$500M	100%	—	—
n	*33*		
$500M–$1B	85%	15%	—
n	*17*	*3*	
$1B–$3B	81%	19%	—
n	*38*	*9*	
More Than $3B	80%	20%	—
n	*33*	*8*	

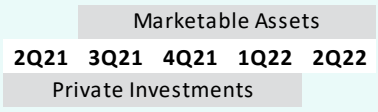
Source: College and university data as reported to Cambridge Associates LLC.
Note: Institutions with no significant private investment allocations (<1% of their total investment portfolios) are reflected in the No PI Allocation category in the pie graph and table by asset size.

PERFORMANCE METHODOLOGY DESCRIPTIONS

Current Basis
Total investment pool return for the trailing one-year period includes marketable asset performance and private investment performance for July 1, 2021, to June 30, 2022.



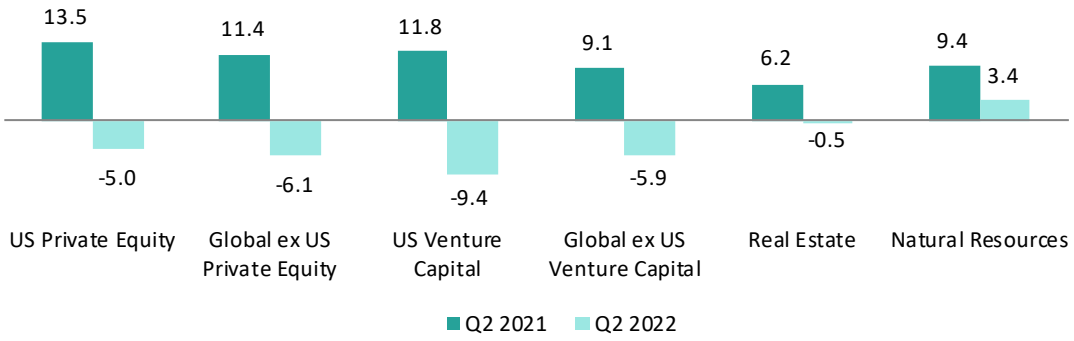
Lagged Basis
Total investment pool return for the trailing one-year period includes marketable asset performance for July 1, 2021, to June 30, 2022, and private investment performance for April 1, 2021, to March 31, 2022.



The performance impact of using one methodology over the other is substantial for this most recent fiscal year. With the lagged basis methodology, private investment performance for second quarter 2021 will be included in the one-year total return calculation, but performance for second quarter 2022 will be excluded. Figure 6 shows the returns of several CA private investment indexes for these two separate quarterly periods. The returns from the second quarter 2021 were higher across all strategies, giving the lagged methodology a significant comparative advantage over the current methodology for fiscal year 2022.

FIGURE 6 CAMBRIDGE ASSOCIATES' PRIVATE INVESTMENT INDEX IRRs

Percent (%)



Source: Cambridge Associates LLC.

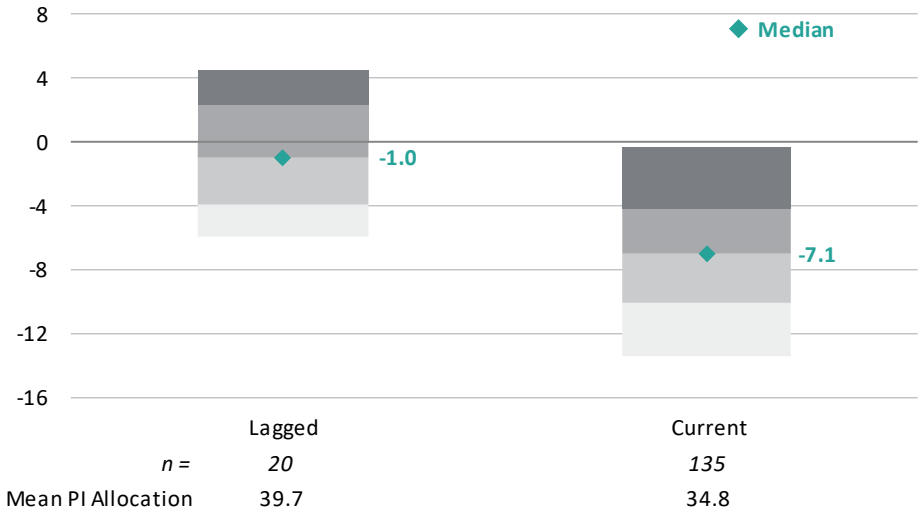
Note: Private investment return statistics are reported as horizon internal rates of return.

The differentials between second quarter 2021 and second quarter 2022 returns were extremely large for the private equity and venture capital (PE/VC) strategies. This is noteworthy given that, on average, more than three-quarters of the total private investment allocation comes from exposure to PE/VC. Given this context, one would expect that endowments using the lagged methodology would report a fiscal year 2022 return that was much higher than what would have otherwise been calculated under the current basis. This is exactly what we found when we split the participant universe into subgroups based on private investment reporting methodology. The median return for lagged reporters was -1.0%, which was more than 600 basis points (bps) higher than the median for current reporters (-7.1%) (Figure 7).

The impact of different private reporting methodologies becomes less significant over longer measurement periods. Using fiscal year 2022 as an example, the lagged reporters certainly benefitted from a comparative perspective by not having the second quarter 2022 private investment markdowns incorporated into the trailing one-year return. However, they benefitted even more so from having second quarter 2021—a period with exceptionally strong private performance—on the front end of the fiscal year return. Over longer multiyear trailing periods, second quarter 2021 is captured for all institutions, which puts both the current and lagged methodology on more even footing. In addition, the remaining advantage from not having the second quarter 2022 markdowns incorporated is diminished over longer periods through the annualized return calculation. For example, a 100-bp impact from a single fiscal year would equate to approximately 10 bps for an annualized ten-year period.

FIGURE 7 RANGE OF FISCAL YEAR 2022 RETURNS BY PRIVATE INVESTMENT REPORTING METHODOLOGY

As of June 30, 2022 • Percent (%) • By Percentile Ranking



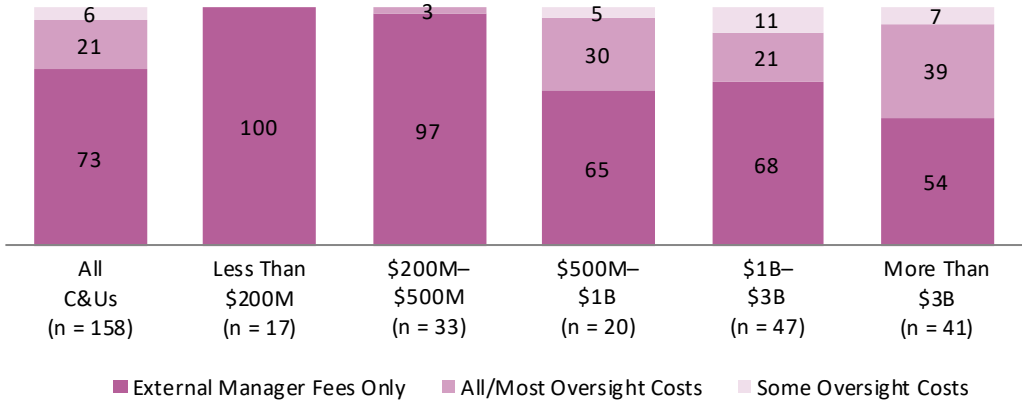
Source: College and university data as reported to Cambridge Associates LLC.

Note: Excluded from this analysis are three institutions that had little to no private investment allocation (i.e., < 1%).

Another reporting issue that can impact peer return comparisons is the method in which net returns are calculated. While each endowment in this study provided performance on a net-of-fees basis, the types of fees deducted in the net return calculation differ among participants. Just under three-quarters of respondents (73%) reported returns net solely of external manager fees in fiscal year 2022 (Figure 8). Another 21% of respondents deduct external manager fees plus all or most of investment oversight expenses. The main drivers of these costs tend to be staff compensation for those institutions that have internal investment offices or consultant/advisor fees for those that rely heavily on external investment advisors. The remaining 6% of respondents deduct external manager fees plus some additional costs but are gross of the major oversight expense categories.

FIGURE 8 TYPES OF FEES DEDUCTED IN FY 2022 NET RETURN CALCULATION

As of June 30, 2022 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.

Notes: Institutions in the All/Most Oversight Costs category net out all or the majority of oversight costs, including the major cost drives (e.g., investment staff compensation and consultant/advisor fees). Institutions in the Some Oversight Costs category deduct external manager fees and some investment oversight costs, but are gross of the major cost drivers.

Smaller endowments are much less likely to deduct oversight costs compared to larger endowments. Only one endowment that is less than $500 million in this study deducts investment oversight costs in their net return calculation. In contrast, nearly half of endowments with asset sizes greater than $3 billion reported returns net of some or all/most oversight expenses, with a significant percentage (39%) netting out the major cost drivers. Past surveys that CA has conducted on this topic show that most endowments have total oversights costs that fall within a range of 10 bps to 20 bps. However, the scale of assets is an important factor as costs in basis points tend to be lower for larger endowments compared to smaller endowments.

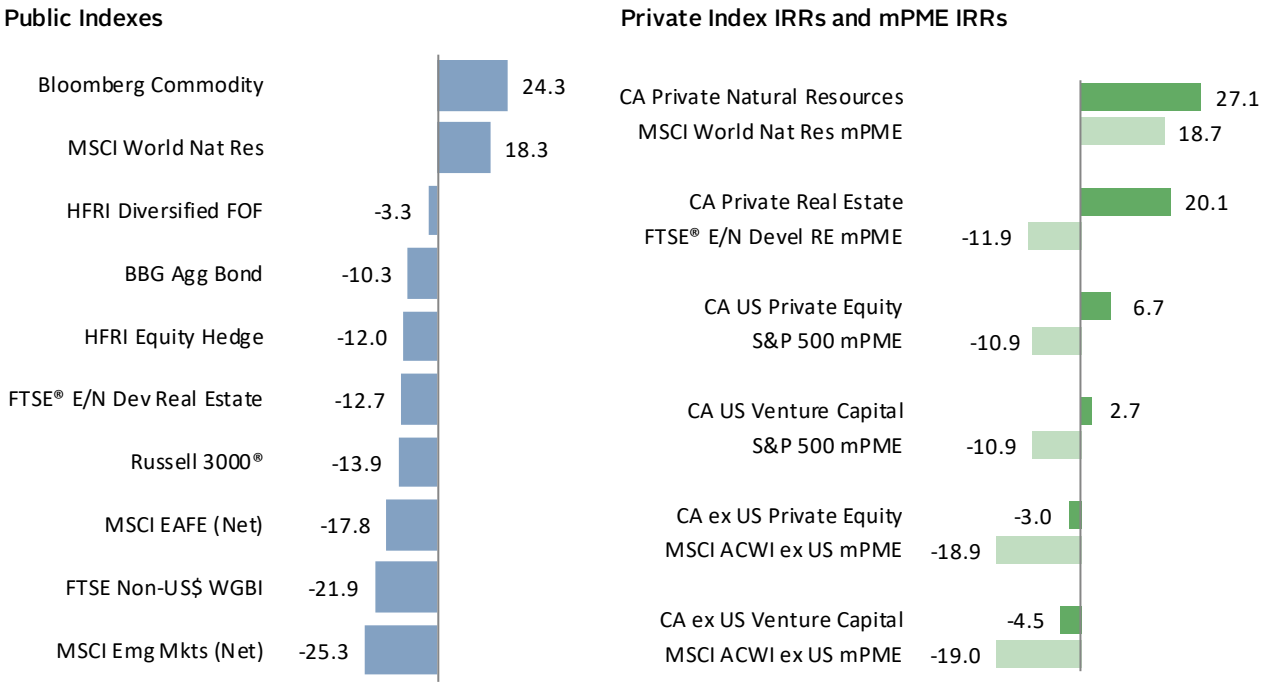
RELATIONSHIP BETWEEN ASSET ALLOCATION AND PERFORMANCE IN FISCAL YEAR 2022

Asset allocation has traditionally been a key factor that helps explain the dispersion in returns reported among participating endowments. Our analysis on this topic begins with an overview of the capital market environment for fiscal year 2022. On the public side, most of the indexes listed in Figure 9 declined by double digits. The exceptions were the Bloomberg Commodity and MSCI World Natural Resources indexes, which returned 24.3% and 18.3%, respectively. Index returns for private strategies were substantially higher than the modified public market equivalent (mPME) benchmarks across the board.[1] Similar to the experience in the public markets, the best private investment returns were produced by real assets–related strategies, with the CA Private Natural Resources Index posting the top return. The CA Private Real Estate Index also grew by more than 20% and outperformed its mPME benchmark by a huge margin. The US PE/VC capital indexes eked out smaller gains, but still performed much better relative to public equity benchmarks.

1 The mPME analysis computes public market performance, which traditionally is reported as a time-weighted return, on an internal rate of return (IRR) basis and allows for a direct comparison of returns between the public and private markets. The result of the mPME calculation is the return that would have been earned had the capital invested in the private strategy been invested in the public market index instead.

FIGURE 9 1-YR INDEX RETURNS

As of June 30, 2022 • Percent (%)



Sources: Index data are provided by Bloomberg Index Services Limited, Cambridge Associates LLC, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., MSCI Inc., the National Association of Real Estate Investment Trusts, Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

The market backdrop provides important context as we explore the differences in asset allocation structures among endowments. The heat map analysis in Figure 10 breaks the participant group into four quartiles based on fiscal year 2022 performance and displays the average allocation across the one-year period for the endowments within each quartile. We typically find that the top-performing endowments had the highest allocations to the strategies that produced the best returns.

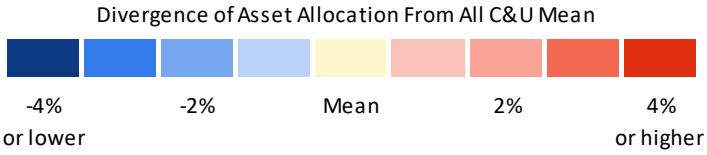
This relationship held true in fiscal year 2022 as top performers had the highest allocations to private strategies. The average private investment allocation among the top quartile of endowments was 43.2%, almost double what the average was for the bottom quartile (22.6%). On a more granular asset class level, the differentials across the four performance quartiles were largest in PE/VC, which was where most endowments had the bulk of their private exposure. While the gap among peers was smaller in real assets, top performers still had an average allocation (9.8%) that was triple that of the bottom quartile (3.2%).

It was mostly the opposite picture when it came to allocations to marketable assets. On average, the top quartile of performers had 56.8% allocated across the marketable asset classes in our framework, while the bottom quartile had an average of 77.3%. Most of that differential can be explained by public equity allocations, where top performers reported significantly less exposure compared to bottom performers.

FIGURE 10 1-YR MEAN ASSET ALLOCATION BY PERFORMANCE QUARTILE

Percent (%) • n = 156

	Marketable Assets						Private Investments			
Quartile	Total Mktbl Assets	Public Equity	Hedge Funds	Public Real Assets	Fixed Income	Cash & Other	Total Private Inv	PE/VC	Private Real Assets	Private Credit
Top Quartile	56.8	30.1	15.3	2.2	5.5	3.7	43.2	30.4	9.8	3.0
2nd Quartile	64.8	35.6	17.2	2.4	6.3	3.4	35.2	26.7	6.4	2.0
3rd Quartile	70.7	40.3	16.3	1.5	7.7	4.9	29.3	21.9	5.8	1.6
Bottom Quartile	77.3	47.4	15.1	1.5	8.7	4.6	22.6	17.9	3.2	1.6
All C&U Mean	67.4	38.3	16.0	1.9	7.0	4.1	32.6	24.3	6.3	2.1



Source: College and university data as reported to Cambridge Associates LLC.

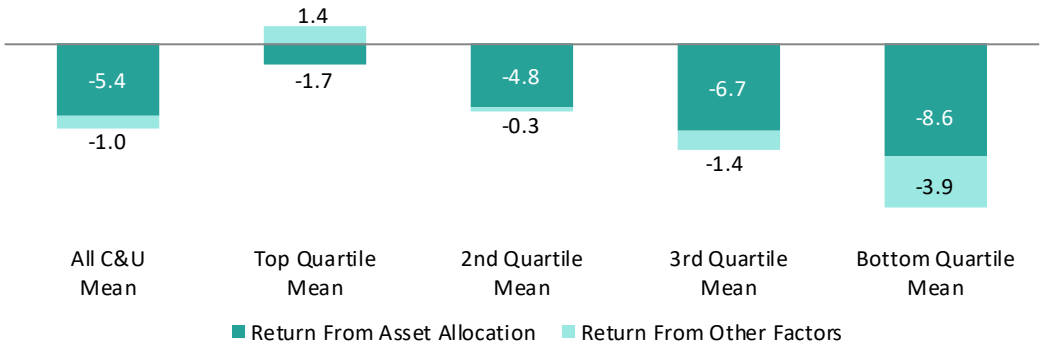
Note: Asset allocation is averaged across the two June 30 periods from 2021 to 2022 for each institution in this analysis.

Our attribution analysis in Figure 11 estimates the performance impact of these different asset allocation structures and the effect on overall peer performance. This analysis assigns a specific index return to represent each asset class in our framework. For each endowment in our universe, we have calculated a blended index return based on the portfolio's beginning fiscal year asset allocation.[2] The result of this calculation is the "return from asset allocation" and represents what the endowment would have earned if it was managed passively throughout the year. For fiscal year 2022, the average asset allocation return was negative for each of the four performance quartiles. However, the average for the top quartile of performers at -1.7% was significantly better than the average for the bottom quartile (-8.6%).

2 See the Appendix of this report for a list of asset class indexes used and an example of how the analysis is conducted using the participant group's mean asset allocation.

FIGURE 11 1-YR ATTRIBUTION ANALYSIS

Trailing 1-Yr as of June 30, 2022 • Percent (%) • n = 156



Source: College and university data as reported to Cambridge Associates LLC.

Note: For more information, see page 66 in the Appendix.

Endowment performance is not driven by asset allocation alone; implementation of the allocations is an important piece as well. Implementation is primarily driven by the effects of active management, or alpha. In addition, there is a performance impact if an asset allocation structure is altered or rebalanced in the middle of the fiscal year. Our attribution analysis aggregates these effects into the "return from other factors" category in Figure 11. The analysis estimates that the top quartile of performers added an average of 1.4% to their returns from these other factors in fiscal year 2022. In contrast, the average for the bottom quartile of performers was -3.9%. The combination of outperforming asset allocation structures and enhanced value add from implementation helps explain why the gap between top performers and bottom performers was so large in fiscal year 2022.

ASSET CLASS RETURNS IN FISCAL YEAR 2022

The attribution analysis from the previous section establishes that there are differentials among endowments in the performance impact from implementation. The primary driver of these differentials is the returns that participants earn for the asset class strategies in their portfolios. Since the top quartile of performers had a higher implementation return compared to the rest of the universe, it stands to reason that this group also reported higher returns across most of the asset class composites. This was evident this past year in the returns earned from alternative asset classes.

Figure 12 uses our heat map–style table to display median asset class returns for each of the four performance quartiles—as defined by the fiscal year 2022 total portfolio return—and the overall participant group. The dispersion in asset class returns was largest within private natural resources, where the median IRR for the top quartile (37.7%) was 700 bps higher than the median for the overall universe (30.7%). Similarly, top performers reported returns in PE/VC strategies that were considerably higher than that of the total participant group. The return differentials in PE/VC are particularly noteworthy, given the large allocations that top performers have to these strategies.

The bottom table on Figure 12 shows median asset class returns among participants for marketable strategies. The largest differential here was in hedge funds and global equity managers, where the median return for the top performance quartile was nearly 600 bps higher than the median of the overall group. The magnitude of outperformance in hedge funds was most significant because top performers allocate a significant portion (15%) of their portfolio, on average, to these strategies.

FIGURE 12 1-YR MEDIAN ASSET CLASS RETURNS BY PERFORMANCE QUARTILE
Percent (%)

Private Investment IRRs

Quartile	Total PE/VC	Venture Capital	Non-Venture Private Equity	Distressed Securities	Private Credit	Total Real Assets	Real Estate	Natural Resources
Top Quartile	14.6	7.7	12.9	16.1	6.8	27.4	22.3	37.7
2nd Quartile	11.0	8.2	8.9	11.3	10.1	26.4	20.5	31.2
3rd Quartile	7.1	0.1	8.5	14.5	4.5	26.6	17.8	29.0
Bottom Quartile	5.9	1.2	8.6	20.3	8.5	13.4	8.0	20.8
All C&U Median	9.4	4.9	9.1	15.2	7.2	25.1	18.1	30.7

Marketable Asset Classes

Quartile	Total Public Equity	Global Equity Managers	US Equity	ex US Devel Mkts Equity	Emg Markets Equity	Fixed Income	Hedge Funds	Comm & Nat Res	Public Real Estate
Top Quartile	-18.3	-16.4	-15.3	-17.8	-24.1	-6.2	-2.8	14.2	-6.1
2nd Quartile	-18.4	-23.3	-13.2	-18.9	-24.2	-7.8	-9.4	13.9	-7.1
3rd Quartile	-17.2	-17.2	-14.0	-18.5	-21.5	-7.8	-9.3	9.0	-9.0
Bottom Quartile	-18.5	-28.7	-16.0	-20.5	-21.6	-8.2	-11.7	2.2	-8.0
All C&U Median	-18.2	-22.0	-14.7	-18.9	-22.6	-7.6	-8.5	10.6	-8.0

Divergence From All C&U Median

-4% or lower | -2% | Mean | 2% | 4% or higher

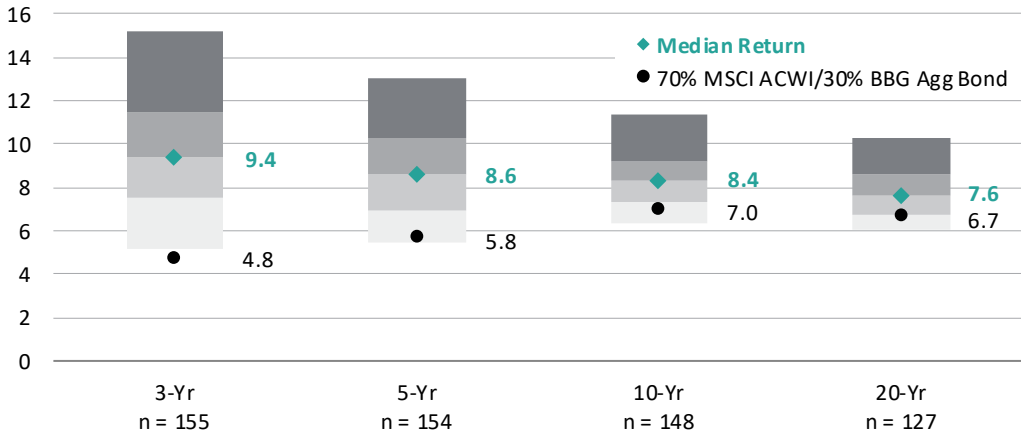
Source: College and university data as reported to Cambridge Associates LLC.
Notes: Institutions are assigned to performance quartiles based on their fiscal year 2022 total portfolio return. For more information, including the number of participants, see pages 67 and 68 in the Appendix.

LONGER-TERM RETURNS

While the absolute returns that endowments earned plunged in fiscal year 2022, their relative performance was outstanding when compared to a blended 70% Global Equity/30% Bond index. This was the second straight year of strong relative performance for endowments, and this has led to a large spread between the endowment median and the simple benchmark over longer trailing periods. The endowment median outperformed by a whopping 460 bps and 280 bps for the trailing three- and five-year periods, respectively. The spreads were smaller, but still sizeable, for the trailing ten- and 20-year periods (Figure 13).

FIGURE 13 TOTAL RETURNS SUMMARY: TRAILING 3-, 5-, 10-, AND 20-YR

Years Ended June 30, 2022 • Percent (%) • By Percentile Ranking



Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

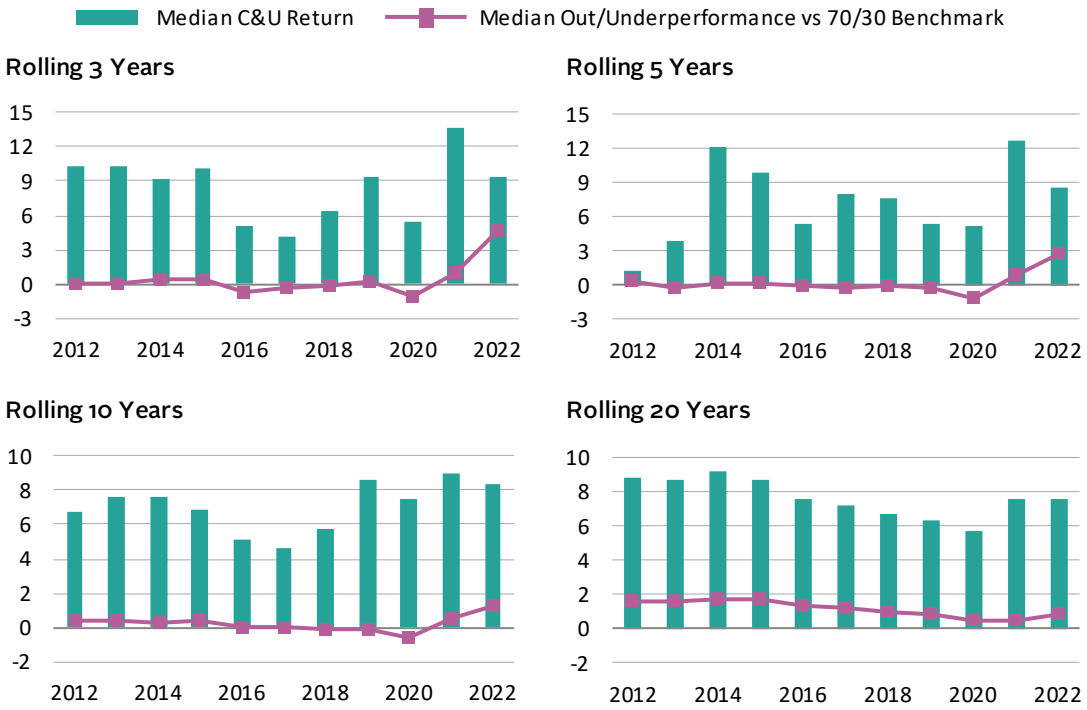
Note: For more information, please see page 69 in the Appendix.

The charts on Figure 14 show the trend in the endowment median return across multi-year trailing periods. Also displayed is the spread between the median and the simple benchmark return for each respective period. The trailing three- and five-year returns as of this most recent June 30 were toward the middle of the pack of the results from the historical period. However, the spread between the endowment median's trailing three- and five-year returns and the simple benchmark were much larger for 2022 than they were at any other point over the past decade. Returns from private markets have been substantially higher than those from public markets over the last couple of years, and this has been a primary driver behind the spike in the endowment median's outperformance versus the simple benchmark. In addition, the poor performance of the public bond market component has been a significant drag on the 70/30 benchmark's return over the last two fiscal years.

The ten-year return for the endowment median in 2022 was the third highest from the past decade, while the 20-year return was the fifth highest. On a relative basis, the trend in the median's ten-year return versus the simple benchmark closely resembles that of the shorter trailing periods, as the magnitude of outperformance jumped sharply for this most recent year end. For the trailing 20-year periods, the median's value add over the benchmark had been gradually shrinking since 2015 but reversed course and ticked back up in 2022.

FIGURE 14 ROLLING MEDIAN RETURNS AND OUT/UNDERPERFORMANCE VERSUS 70/30 BENCHMARK

Years Ended June 30 • Percent (%)



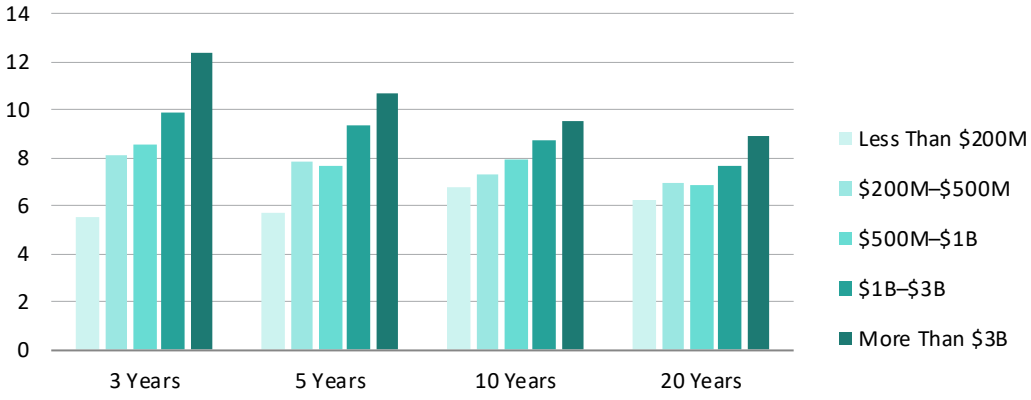
Source: College and university data as reported to Cambridge Associates LLC.

Note: The number of institutions included in the median calculation varies from one period to the next, and is smaller in earlier years compared to the present day.

Larger endowments outperformed smaller endowments by significant margins for the trailing periods ended June 30, 2022 (Figure 15). The contrast was most striking for the trailing three-year period, where the median return for endowments more than $3 billion (12.3%) was more than double the median of endowments less than $200 million (5.5%). While the spreads between those two cohorts were narrower for longer trailing periods, it was still a considerable 260 bps for the trailing 20-year period.

FIGURE 15 MEDIAN TRAILING 3-, 5-, 10-, AND 20-YR RETURNS BY ASSET SIZE

Years Ended June 30, 2022 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.

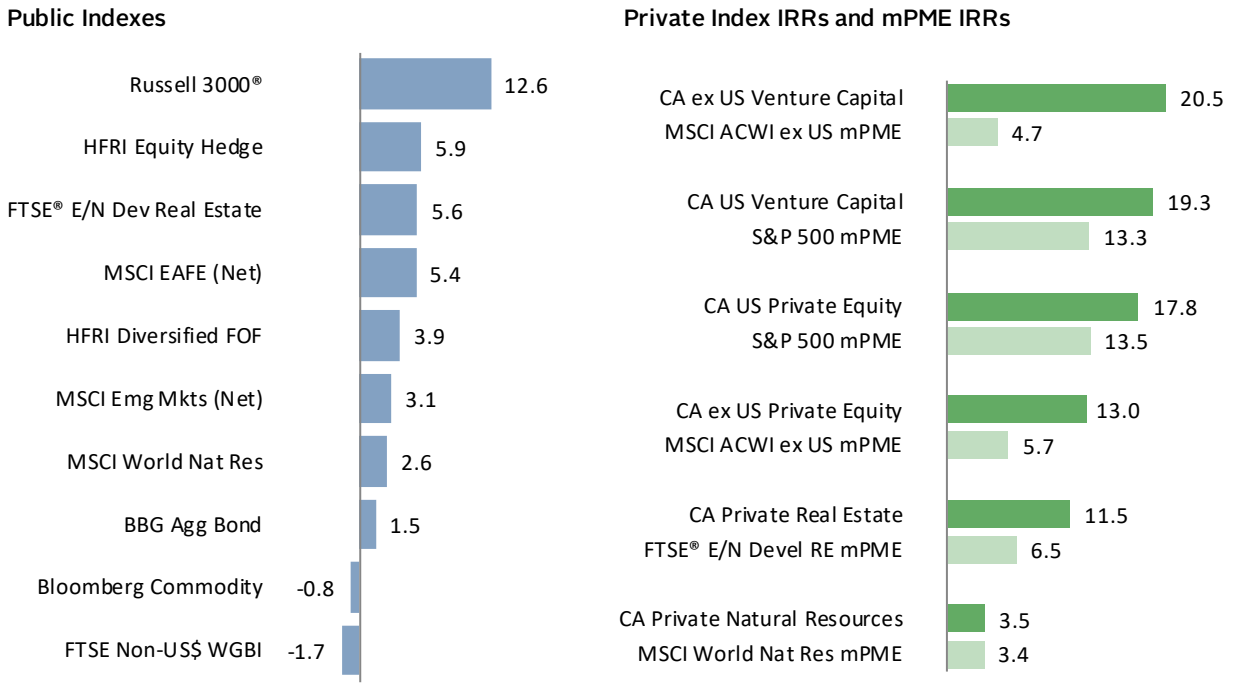
Note: For more information, please see page 69 in the Appendix.

PERFORMANCE DRIVERS FOR THE TEN-YEAR PERIOD

The market backdrop for the trailing ten-year period shows that private investment strategies outperformed their public market counterparts, and in some instances by very large margins. Among the indexes listed in Figure 16, venture capital strategies performed the best with both the US and ex US versions returning approximately 20%. The private equity and private real estate indexes posted returns that were in excess of 10% as well. Among public indexes, the US stock market as represented by the Russell 3000® Index was by far the top-performing strategy. Meanwhile, the low interest rate environment of the last decade resulted in historically low returns for investment-grade fixed income strategies. And despite the outstanding performance produced by commodities and natural resources in fiscal year 2022, the returns of these strategies were muted over the full trailing ten-year period.

FIGURE 16 10-YR INDEX RETURNS

As of June 30, 2022 • Percent (%)



Sources: Index data are provided by Bloomberg Index Services Limited, Cambridge Associates LLC, Frank Russell Company, FTSE International Limited, Hedge Fund Research, Inc., MSCI Inc., the National Association of Real Estate Investment Trusts, Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

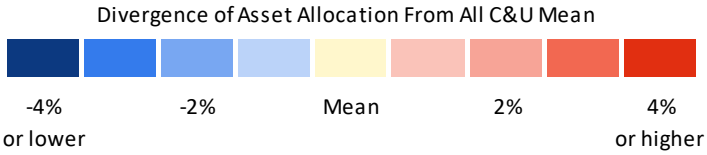
The analysis of peer asset allocation structures over the last ten years fits right in with the takeaways from the index comparisons. The heat map analysis in Figure 17 averages asset allocation data of participating endowments across the 11 June 30 periods from 2012 to 2022 and places each endowment into the performance quartile that aligns with their ten-year total return ranking. The top quartile of performers had the highest average allocation across the past decade to private investments (37.6%), with most of that exposure coming from PE/VC (25.5%). The average allocations gradually decline when stepping down the quartile categories, with the bottom quartile

reporting the lowest allocations to private investments (14.3%). Top performers also had the highest average allocation to hedge funds on the marketable side. The inverse was true in traditional bonds and equities, with the combined average allocation to these strategies being just 34.0% for this group of institutions.

FIGURE 17 10-YR MEAN ASSET ALLOCATION BY PERFORMANCE QUARTILE

Percent (%) • n = 118

	Marketable Assets						Private Investments			
Quartile	Total Mktbl Assets	Public Equity	Hedge Funds	Public Real Assets	Fixed Income	Cash & Other	Total Private Inv	PE/VC	Private Real Assets	Private Credit
Top Quartile	62.4	29.1	22.6	2.1	4.9	3.8	37.6	25.5	10.9	1.2
2nd Quartile	72.3	37.8	20.5	3.7	6.9	3.4	27.7	17.5	8.6	1.5
3rd Quartile	77.1	40.9	19.5	3.6	9.0	4.1	22.9	14.3	6.6	2.1
Bottom Quartile	85.7	46.2	17.8	4.0	12.1	5.6	14.3	8.4	4.6	1.2
All C&U Mean	74.4	38.5	20.1	3.3	8.2	4.2	25.6	16.5	7.7	1.5



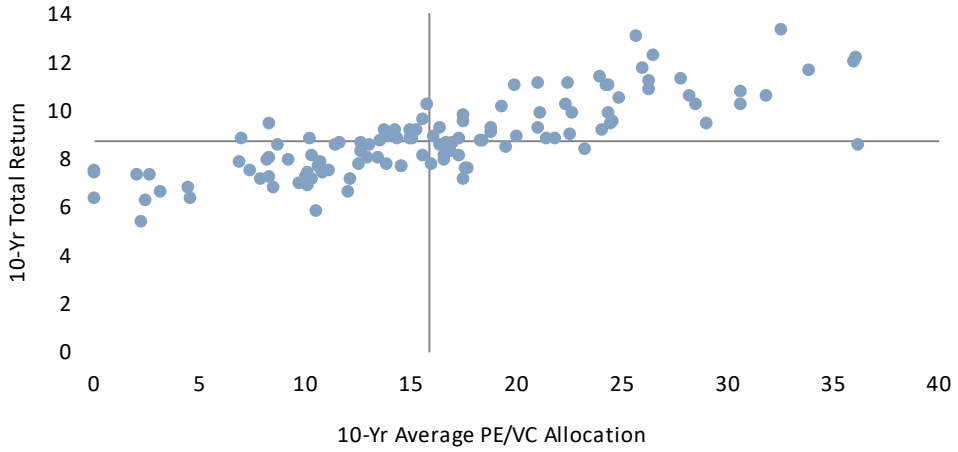
Source: College and university data as reported to Cambridge Associates LLC.

Note: Asset allocation is averaged across the 11 June 30 periods from 2012 to 2022 for each institution in this analysis.

Of all the asset classes listed in the heat map table, PE/VC is the one that had the strongest relationship with total portfolio performance for the trailing ten-year period. A simple way to visualize this is by plotting data from endowments onto a scatterplot. In Figure 18, each C&U that reported data over the last decade is represented by a dot based on where its ten-year average allocation to PE/VC intersects with its trailing ten-year return. The data do not show a perfect relationship—some endowments that have above-median allocations to PE/VC had below-median total returns and vice versa. However, there is a clear trend from left to right on the scatterplot, as endowment performance tends to be higher as the allocation to PE/VC increases.

FIGURE 18 10-YR PE/VC ALLOCATION VS TOTAL RETURN

As of June 30, 2022 • n = 118



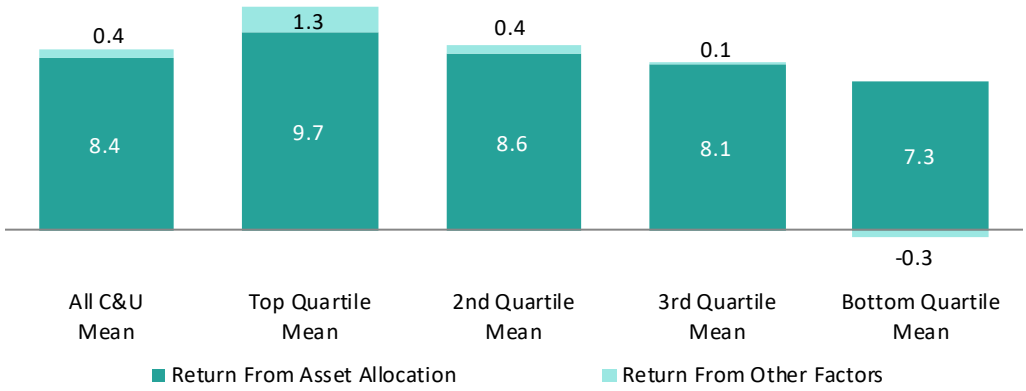
Source: College and university data as reported to Cambridge Associates LLC.

Note: The lines that traverse the graph are drawn where the median PE/VC allocation among participants intersects with the median ten-year total portfolio return.

The attribution model further illustrates the impact of different asset allocation structures on the trailing ten-year return. The average asset allocation return over this period for the top quartile of performers was 9.7% (Figure 19). For the bottom quartile of performers, the average asset allocation return was 240 bps lower at 7.3%. This was wider than the gap in the portion of return that is explained by other factors such as implementation. The model estimates the average return from other factors for top performers was 1.3%, which was 160 bps higher than the average of the bottom quartile (-0.3%).

FIGURE 19 10-YR ATTRIBUTION ANALYSIS BY PERFORMANCE QUARTILE

As of June 30, 2022 • Percent (%) • n = 118



Source: College and university data as reported to Cambridge Associates LLC.

The endowments that reported the highest total returns over the past decade not only had the largest allocations to private investments, but they also reported performance that was higher than the overall universe median returns in most of these strategies. This stood out the most in venture capital where the median IRR for the top-performing endowments was 25.6% over the trailing ten-year period, more than 400 bps higher than the median for the overall C&U universe (Figure 20).

FIGURE 20 10-YR MEDIAN ASSET CLASS RETURNS BY PERFORMANCE QUARTILE

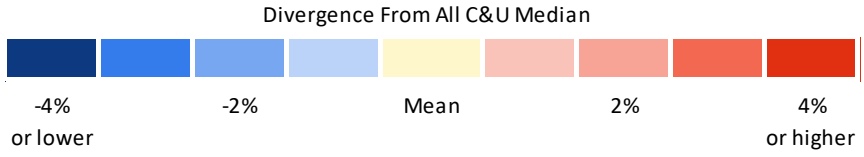
Percent (%)

Private Investment IRRs

Quartile	Total PE/VC	Venture Capital	Non-Venture Private Equity	Distressed Securities	Private Credit	Total Real Assets	Real Estate	Natural Resources
Top Quartile	21.1	25.6	18.1	9.6	9.1	8.6	12.4	4.7
2nd Quartile	19.8	21.1	18.2	10.9	11.1	6.9	12.8	3.9
3rd Quartile	19.0	19.7	18.8	8.5	10.9	6.8	10.8	3.0
Bottom Quartile	17.0	18.9	15.5	7.7	9.4	6.9	9.5	1.5
All C&U Median	18.9	21.1	17.3	10.2	10.0	6.8	12.1	3.7

Marketable Asset Classes

Quartile	Total Public Equity	Global Equity Managers	US Equity	ex US Devel Mkts Equity	Emg Markets Equity	Fixed Income	Hedge Funds	Comm & Nat Res
Top Quartile	8.7	8.7	11.9	7.0	4.8	1.7	5.5	0.3
2nd Quartile	8.7	9.3	12.9	6.6	4.1	1.6	5.2	0.8
3rd Quartile	8.7	8.9	12.5	6.5	3.1	1.7	4.4	0.1
Bottom Quartile	8.3	8.2	11.5	6.0	2.8	1.7	4.6	-1.4
All C&U Median	8.6	8.7	12.0	6.5	3.7	1.6	5.0	-0.1



Source: College and university data as reported to Cambridge Associates LLC.

Notes: Institutions are assigned to performance quartiles based on their trailing 10-year total portfolio return. For more information, including the number of participants, see pages 70 through 73 in the Appendix.

As is typically the case, there was less variation in the returns reported by participants in marketable asset classes. However, what is remarkable is the lack of blue and red colors in the heat map table on the bottom half of Figure 20. There were only two instances where the median of one of the performance quartiles was 100 bps more than or less than the overall universe median. More detail on asset class returns across the trailing three-, five-, and ten-year periods is included in the appendix of this report.

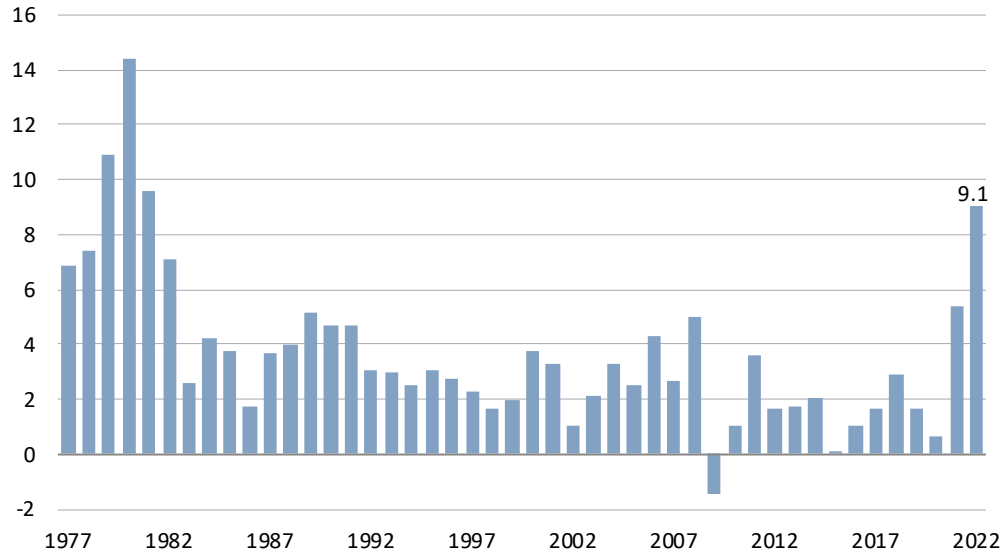
INFLATION-ADJUSTED RETURNS

Inflation played a leading role in the macroeconomic story of fiscal year 2022. The rate of inflation in the United States, as represented by the consumer price index, rose by 9.1% for the most recent fiscal year and was the largest annual increase seen since the early 1980s (Figure 21). Taking into account the beginning of the inflation spike

from the previous fiscal year, the two-year annualized rate of inflation was 7.2% as of June 30, 2022. This spike in inflation, along with the negative return environment in fiscal year 2022, means that many endowments lost a significant amount of purchasing power over the last year.

FIGURE 21 TRAILING 1-YR INFLATION RATE

Fiscal Years 1977–2022 • Periods Ended June 30



Source: US Department of Labor - Bureau of Labor Statistics.

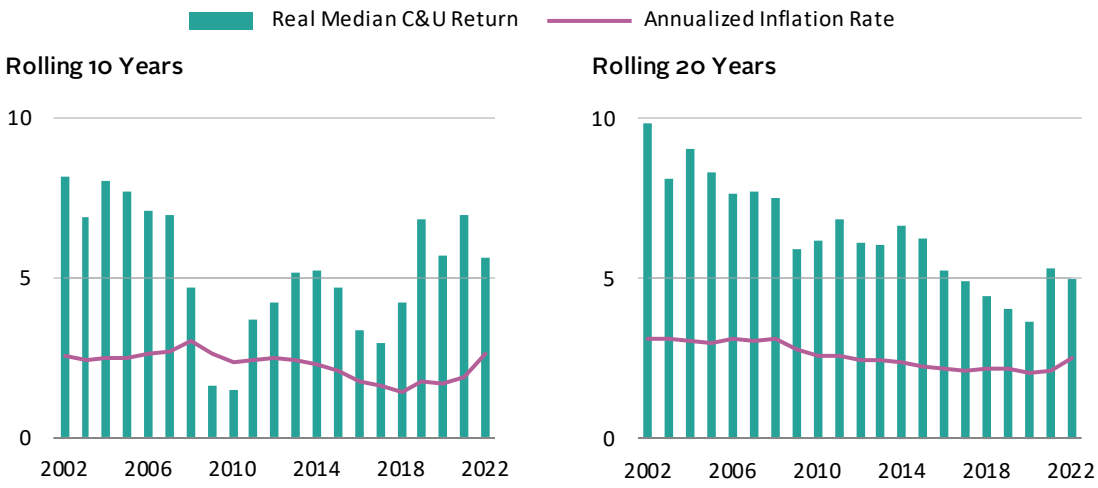
Note: The inflation rate is represented by the Consumer Price Index - All Urban Consumers.

A primary objective when managing an endowment is to preserve, and perhaps even grow, the purchasing power of its assets. The volatile nature of investment markets makes this task impossible to achieve on a year-to-year basis, so institutions establish return targets that they aim to meet over the long term. Most endowments have targeted a 5% real, or inflation-adjusted, return in pursuit of this goal. Meeting the return target allows an endowment to offset the erosion of purchasing power caused by inflation and replenish the annual spending that is drawn from the portfolio.[3]

The task of earning 5% on a real basis became much more challenging with the onset of the GFC in the late 2000s. By 2008, the median ten-year real return for endowments had fallen below 5% and it stayed below this level for much of the ensuing decade (Figure 22). The median 20-year return also took a hit post-GFC and ultimately fell below the 5% level in 2017. While the extraordinary returns of fiscal year 2021 helped the ten- and 20-year median returns surge to their highest levels in several years, these figures fell back down to 5.6% and 5.0%, respectively, as of the end of fiscal year 2022.

3 See the Investment Policy section of this report, and Figure 25 specifically, for more information on this topic. While 5% has traditionally been the most common real return target, the exact percentage can be higher or lower depending on an institution's specific objectives.

FIGURE 22 ROLLING MEDIAN REAL RETURNS: TRAILING 10- AND 20-YR
Years Ended June 30 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Notes: The number of institutions included in the median calculation varies from one period to the next and is smaller in earlier years compared to the present day. The inflation rate is represented by the Consumer Price Index - All Urban Consumers.

Of the endowments that provided spending rate data for the last ten years, nearly 90% reported a real return after spending that was above 0% for this historical period. The significance of surpassing 0% is that an endowment experienced asset growth even after the effects of inflation and spending were removed from the equation. The median real return after spending for the trailing ten-year period was 1.6% (Figure 23). For the trailing 20-year period, slightly more than three-quarters of responding endowments reported a real return after spending that was above 0%, with the median at 1.0%.

FIGURE 23 10- AND 20-YR REAL RETURNS AFTER SPENDING
As of June 30, 2022 • Percent (%) • By Percentile Ranking

Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 73 in the Appendix.

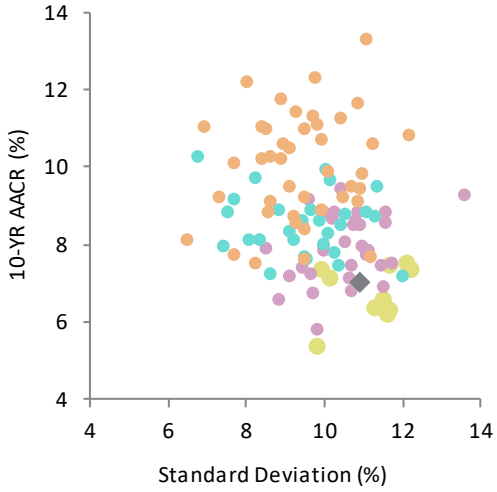
RISK-ADJUSTED RETURNS

The most common approach to measuring risk-adjusted performance is by the Sharpe ratio, which shows how much return above the risk-free rate (T-bills) the investor has earned per unit of risk (defined as the standard deviation of returns). The higher the Sharpe ratio, the more the investor has been compensated for each unit of risk taken. Risk-adjusted performance comparisons can be complicated when portfolios have

significant allocations to private investments. The frequency and timing of private investment valuations can dampen the standard deviation for the returns of these assets. Thus, a portfolio with high allocations to private investments can yield a lower volatility statistic relative to portfolios that have higher public equity allocations. For this reason, we have split endowments into subcategories in Figure 24 based on their average allocations to private investments over the trailing ten-year period.

The median Sharpe ratio was 1.02 for endowments that had an allocation of 30% or more to private investments. In comparison, the median Sharpe ratio was just 0.58 for endowments that had less than 10% allocated to private investments. The better Sharpe ratio for the group with the highest private allocations is mostly a function of this group's higher median return, but it is also partly attributable to their lower median standard deviation.

FIGURE 24 10-YR STANDARD DEVIATION AND SHARPE RATIO
Periods Ended June 30, 2022



	AACR	Standard Deviation	Sharpe Ratio	*n*
All C&U Median	8.6	9.9	0.84	*113*
Median by PI Allocation				
Less Than 10%	6.8	11.6	0.58	*10*
10%–20%	7.9	10.6	0.73	*32*
20%–30%	8.5	9.6	0.84	*29*
More Than 30%	10.2	9.4	1.02	*42*
70/30 Benchmark	7.0	10.9	0.62	

Sources: College and university data as reported to Cambridge Associates LLC. Index data are provided by Bloomberg Index Services Limited and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Section 2: Investment Policy

An investment policy provides guidelines for trustees, investment committee members, investment staff, advisors, and other relevant parties involved in the endowment's investment management and governance processes. The investment policy statement (IPS) is the formal document that outlines the important components of this policy. Some institutions may have additional informal guidelines that are considered in the investment management process but are not documented in the IPS. Our survey touched on several issues related to endowment investment policies/guidelines and the following section summarizes these responses.

ROLE OF THE ENDOWMENT

A key issue for any investor to consider is the purpose and role of its investment assets. Most colleges and universities don't generate enough revenue to cover the expenses incurred to operate their institutions and rely upon donations and endowed funds to provide additional financial support to their annual budgets. Colleges and universities must balance their annual reliance on endowment spending and the commitment to provide support for their missions in perpetuity.[4]

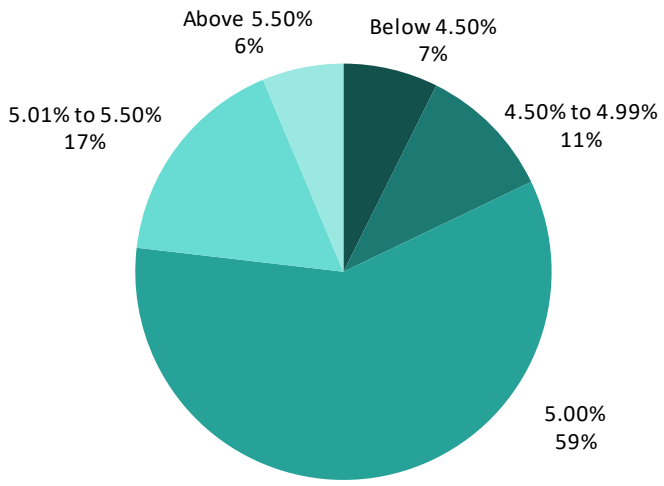
One term that is often associated with endowment management is intergenerational equity. The concept of intergenerational equity is that future generations should receive financial support from the endowment that is equitable to what is received by today's students and programs. To meet this objective, an endowment must earn a return over the long term that replenishes both the spending withdrawals from the portfolio and the purchasing power lost because of inflation.

Of the survey participants that specified the primary role for their endowment, 89% indicated it was to maintain intergenerational equity. The remaining 11% of respondents indicated that the primary role of the endowment was to expand its permanent capital so that the endowment could fulfill a bigger role in the institution's business model in the future. While the overall endowment pool can be expanded by raising new gifts, existing endowment funds would need to earn a long-term return exceeding the combined rate of spending and inflation if the objective is to grow the purchasing power of those funds.

Our survey asked participants to provide their real return objective for the endowment if one was used. Since endowment returns are volatile from year to year, return objectives should be evaluated from the long-term perspective instead of a goal that must be met every year. As has been the case historically, the most common real return objective is 5%, which was cited by 59% of endowments (Figure 25). Slightly less than one-quarter of respondents have an objective above 5%, while 18% reported an objective of less than 5%.

4 See the Institutional Support section of this report for commentary and analysis on endowment spending.

FIGURE 25 REAL TOTAL PORTFOLIO RETURN OBJECTIVES
As of June 30, 2022 • n = 95



Source: College and university data as reported to Cambridge Associates LLC.

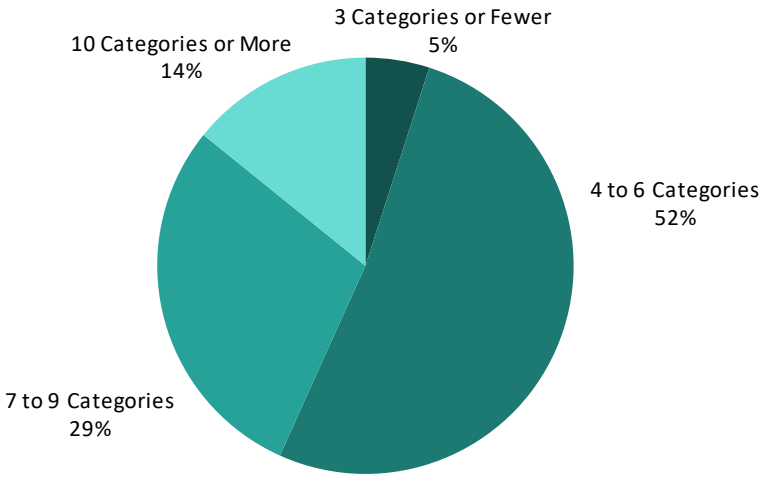
ASSET ALLOCATION POLICY

The asset allocation component of the investment policy specifies the asset classes allowed in the portfolio and assigns target allocations and/or ranges for those asset class categories. The categories and targets chosen are based on the portfolio's risk tolerance, liquidity needs, and performance objectives. Our survey requests that respondents provide the asset class categories used in their endowment's asset allocation policy.

There are differences in the policy frameworks reported among respondents, with some endowments having more detailed policies than others. Most endowments use separate categories in their framework to distinguish between equities, hedge funds (or diversifying strategies), real assets, and fixed income. For equities, it is the most common practice to have separate targets that split public and private assets into different categories. In addition, some endowments further break out their policy allocations to public equities by separate geographic regions. Similarly, there are often multiple categories used to account for real assets based on the public versus private split and/or to distinguish between the various types of substrategies (e.g., natural resources versus real estate).

Figure 26 shows the distribution of the number of categories that endowments cited in their overall asset allocation policy. The greatest concentration was within a range of four to six categories, with just over one-half (52%) of respondents falling within this range. Slightly less than one-third (29%) of respondents reported that they used anywhere from seven to nine categories, while 14% of endowments use ten or more categories. Just 5% of respondents cited three categories or fewer in their policy framework.

FIGURE 26 NUMBER OF CATEGORIES IN THE POLICY ALLOCATION FRAMEWORK
As of June 30, 2022 • n = 141



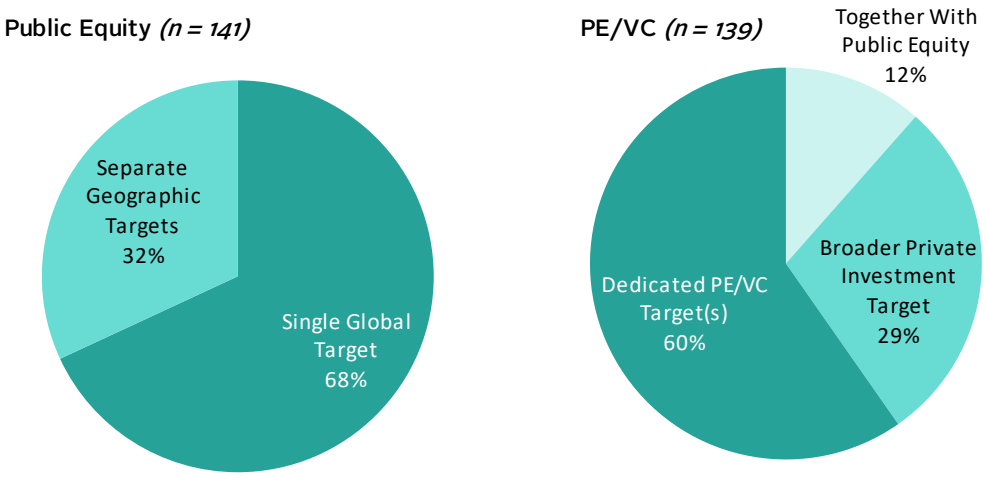
Source: College and university data as reported to Cambridge Associates LLC.

A broad policy approach is most common for public equities, with 68% of respondents reporting a single category that captures their entire public equity allocation (Figure 27). The remaining 32% of respondents assign multiple targets that are based on geographic regions, although there are various combinations of regions used across endowments. The single-category approach provides the investment management team more flexibility, while the multi-category approach puts more constraints on how the public allocations are implemented. The trend over the last year saw a notable percentage of respondents move toward the broader approach, as the breakdown from the fiscal year 2021 study showed 58% using a single category versus 42% using multiple categories.

A small percentage (12%) of respondents roll PE/VC together with public equity into a single category in their policy framework. In these instances, a name such as "Growth" or simply "Equity" is used to capture the combined exposure. However, most endowments separate categories for public and private equity when constructing their asset allocation policy. The most common approach, which was cited by 60% of respondents, is to have either a dedicated target for PE/VC or break out non-venture PE/VC into two separate categories. Another 29% of endowments include PE/VC together with other private strategies into a single category called "Private Investments" in their framework.

FIGURE 27 CAPTURING EQUITIES IN THE ASSET ALLOCATION POLICY

As of June 30, 2022



Source: College and university data as reported to Cambridge Associates LLC.

BENCHMARKING

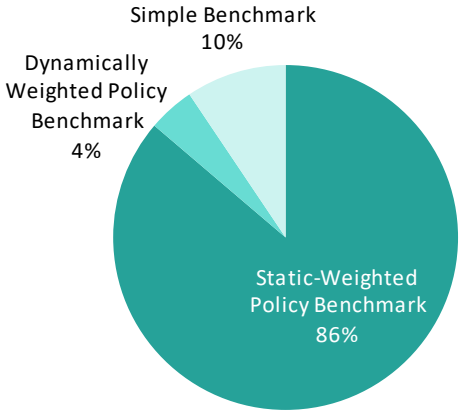
Benchmarking investment performance is an essential piece of a well-functioning governance process for an endowment. The purpose of benchmarking is to answer the question "How are we doing?" in ways that are both accurate and relevant to the objectives of the portfolio being measured. No single benchmark can answer every aspect of that question, so institutions may use a variety of benchmarks in this process.

We asked participants in this study to provide the components of what they consider to be their policy portfolio benchmark. The vast majority (86%) of respondents use a static-weighted policy benchmark that matches or aligns closely with the categories and target weightings in the asset allocation policy framework (Figure 28). This approach can help an endowment evaluate whether it has outperformed a mix of indexes that represents its default or normative position. Such an evaluation not only captures the impact of manager selection decisions, but also the effect of differences between the portfolio's actual asset allocation and the policy targets. A much smaller percentage (4%) of respondents use a dynamically weighted policy benchmark, where the weightings of the indexes update frequently (e.g., monthly) to match the actual asset allocation of the portfolio. This type of benchmark is intended to focus solely on manager selection decisions and neutralizes the effect of over/underweights of asset allocation versus policy targets.

The remaining 10% of respondents use a simple benchmark that incorporates a blend of a broad-based equity benchmark and a bond index. Assuming that a portfolio has diversified into alternative asset classes, a simple benchmark evaluates whether the decision to diversify and actively manage the portfolio paid off for the endowment. The MSCI All Country World Index was used for the equity component by 12 of the 13 endowments that cited this type of benchmark. Similarly, the Bloomberg Aggregate Bond Index was the most common index reported for the bond component (nine of 13 respondents).

FIGURE 28 TYPES OF POLICY PORTFOLIO BENCHMARKS

As of June 30, 2022 • n = 138



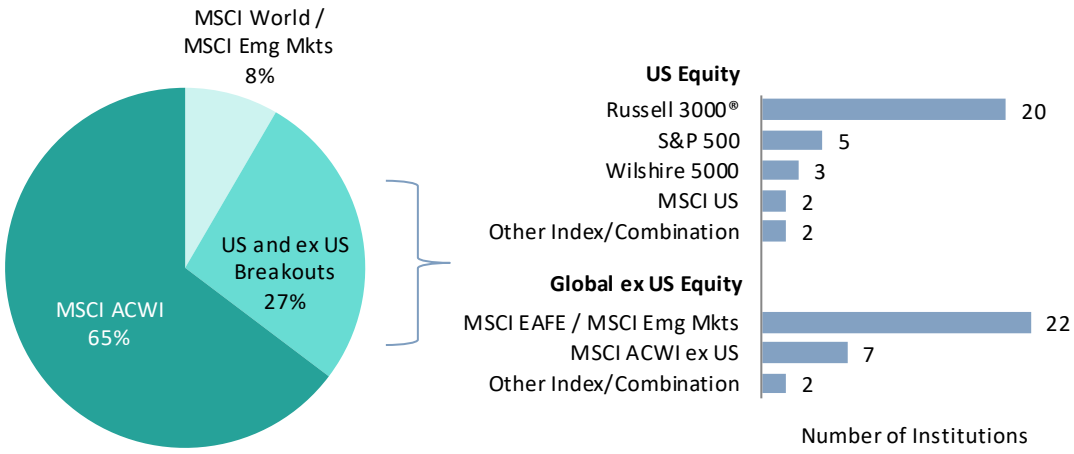
Source: College and university data as reported to Cambridge Associates LLC.

Figure 29 narrows the universe down to the respondents that cited a static-weighted policy benchmark and shows the indexes that are most frequently used to represent public equity. Almost two-thirds (65%) of this group used a version of the MSCI All Country World Index, which tracks stocks across developed and emerging market countries world-wide. Another 8% of respondents use a blend of the MSCI World Index, which tracks stocks in developed countries, and the MSCI Emerging Markets Index. The remaining 27% of respondents use separate indexes to benchmark exposure to US and global ex US categories.

The latter practice of using a US-specific index and one or more global ex US indexes in the policy benchmark has become less common in recent years. In our study from five years ago, a majority (56%) of respondents used this approach. Among this year's universe, the Russell 3000® Index was overwhelmingly the most common benchmark for those that cited US-specific index. Similarly, a combination of the MSCI EAFE and MSCI Emerging Markets indexes was by far the most prevalent practice used to represent global ex US equity.

FIGURE 29 COMPONENTS OF THE POLICY PORTFOLIO BENCHMARK: PUBLIC EQUITY

As of June 30, 2022 • n = 120

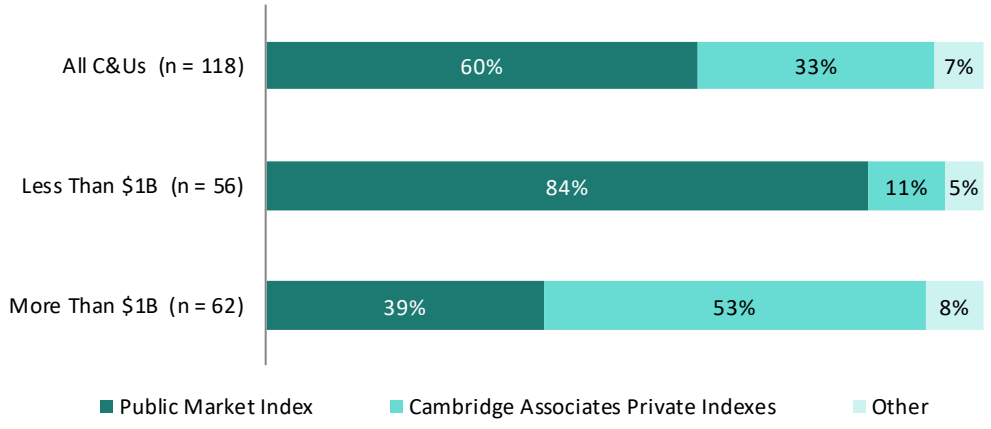


Source: College and university data as reported to Cambridge Associates LLC.

Accounting for private equity in the policy benchmark can be challenging because there is no single index that meets all of the standards of a valid benchmark. Hence, we see different approaches used across endowments in this study. For the overall respondent group, the use of a public index is the most common approach as 60% of respondents use this method (Figure 30). The public index is most prevalent among endowments less than $1 billion as it was cited by 84% of this group. The rationale for using this approach is that the capital would have been invested in public equity markets if it was not invested in private equity. Therefore, the public index can help evaluate whether the decision to invest in private equity paid off for the endowment. The use of a public index can also be a straightforward approach when a portfolio is still in a phase of building its private program and there is an underweight in current private allocations versus the long-term target.

While the use of a public equity index in this way can capture the opportunity cost of investing in private equity, it does not evaluate how well those private allocations are implemented. One-third of the total participant group (33%) uses the CA private investment indexes, which are calculated by pooling together all of the cash flows and valuation changes for the underlying private funds included in a specific strategy's index. These indexes are not investable nor is there transparency into the names and weightings of the private companies included, and, consequently, they don't satisfy the requirements sought for an ideal benchmark. However, these indexes can be custom weighted by vintage year and provide a better evaluation of private investment fund selection compared to what a public index offers. It is likely for this reason that the approach continues to be most prevalent among larger endowments, of which many have performance-based incentive compensation programs for their investment staff.

FIGURE 30 COMPONENTS OF THE POLICY PORTFOLIO BENCHMARK: PRIVATE EQUITY
As of June 30, 2022

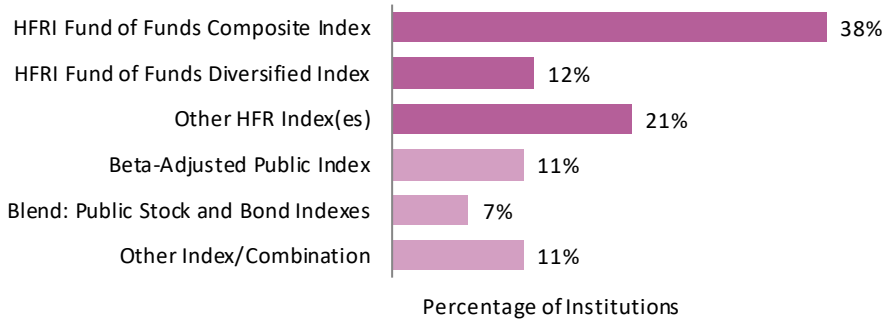


Source: College and university data as reported to Cambridge Associates LLC.

Endowments also face similar challenges of selecting an appropriate index when accounting for hedge fund allocations in the policy benchmark. Hedge Fund Research® (HFR) produces indexes that broadly track hedge fund managers that report to their database. The HFR indexes may be defined more granularly by investment

substrategies, geographic regions, and other criteria. While endowments may use this approach to evaluate their own manager selection versus a broad universe of hedge funds, these indexes lack some of the desired qualities of a valid benchmark, such as being investable and transparent. Still, more than two-thirds of the respondent group use one or more of the indexes calculated by HFR. The HFRI Fund of Funds (FOF) Composite Index was used by 38% of endowments, while the HFRI FOF Diversified Index was the next most commonly cited (12%). Another 21% of respondents use a different index or a combination of indexes provided by HFRI. As shown in Figure 31 the remaining respondents use either a beta-adjusted public equity index, a blend of a public equity index and a bond index, or some other type of index.

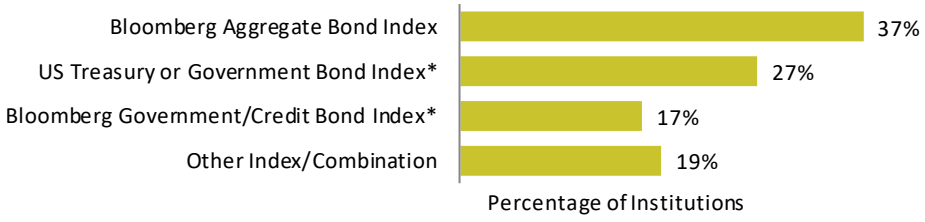
FIGURE 31 COMPONENTS OF THE POLICY PORTFOLIO BENCHMARK: HEDGE FUNDS
As of June 30, 2022 • n = 106



Source: College and university data as reported to Cambridge Associates LLC.

The Bloomberg Aggregate Bond Index was the most common benchmark for fixed income but was cited by just 37% of endowments (Figure 32). Slightly more than one-quarter of respondents (27%) use a US Treasury or US government bond index and another 17% of endowments use a version of the Bloomberg Government/Credit Index. There are different versions for each of these indexes based on range of maturity and many endowments use the specific version that reflects their portfolio's underlying fixed income exposure. The remaining 19% of respondents use some other type of index or a combination of multiple indexes. For real assets, benchmark combinations are even more unique across the participant group due to the wide variety of strategies employed under this category.

FIGURE 32 COMPONENTS OF POLICY PORTFOLIO BENCHMARKS: FIXED INCOME
As of June 30, 2022



Source: College and university data as reported to Cambridge Associates LLC.
*Includes subindexes of the overall strategy that have various ranges of maturity.

INVESTMENT PERFORMANCE VERSUS POLICY PORTFOLIO BENCHMARKS

The various approaches to benchmarking we have covered in this section are important to keep in mind when analyzing endowment performance relative to policy benchmarks. This is most evident with the benchmarking of PE/VC. As we detailed in the Investment Portfolio Returns section of this report, the CA Private Equity and Venture Capital indexes performed substantially better compared to the returns of public equity indexes in fiscal year 2022. Endowments that use the private indexes calculated a policy benchmark return that was considerably higher compared to what it would have been if a public index were used to represent PE/VC, thus making it harder to outperform the benchmark.

Figure 33 uses a scatterplot display to illustrate this effect. The horizontal axis represents the actual portfolio return for fiscal year 2022, while the vertical axis represents the spread between that return and the policy benchmark. The dots represent where each respondent lands in this data set and are color-coded based on which method they use to represent PE/VC in the policy benchmark. At virtually all spots along the total return scale, endowments using a public index for PE/VC—as represented by the purple dots—reported more value add versus the policy benchmark compared to those that use the CA private indexes.

FIGURE 33 FISCAL YEAR 2022 TOTAL RETURN VS POLICY BENCHMARK

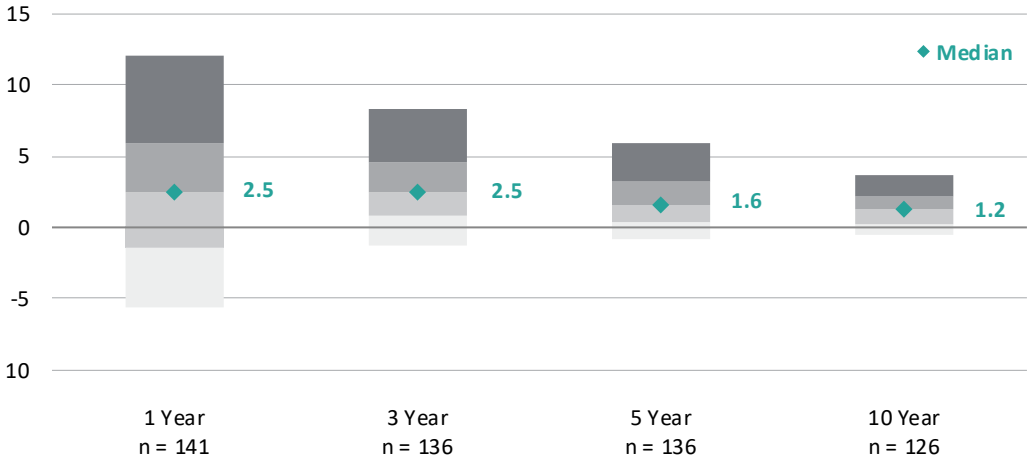
As of June 30, 2022 • n = 137

Source: College and university data as reported to Cambridge Associates LLC.

Among all respondents, the median spread between the actual return and the policy benchmark return was 2.5 ppts in fiscal year 2022. Almost two-thirds (65%) of endowments reported that the spread was positive, meaning their total return outperformed the policy benchmark. Strong relative returns from fiscal year 2022 and the previous year, where the median spread was 5.1 ppts, boosted results for longer periods. For each of the multiyear trailing periods in Figure 34, more than 80% of participating endowments reported a return that outperformed their policy benchmark.

FIGURE 34 RANGE OF OUT/UNDERPERFORMANCE OF TOTAL RETURN VS POLICY PORTFOLIO BENCHMARK

Years Ended June 30, 2022 • Percentage Points • By Percentile Ranking



Source: College and university data as reported to Cambridge Associates LLC.

Note: Data points represent the difference between the total portfolio return and the policy portfolio benchmark return.

Section 3: Portfolio Asset Allocation

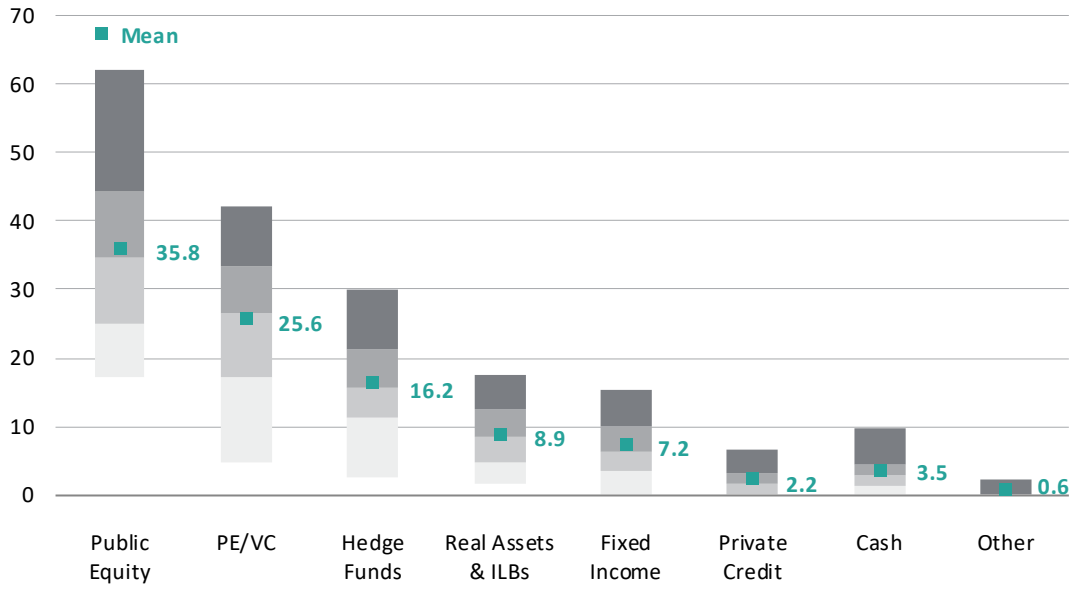
2022 ASSET ALLOCATION

Colleges and universities essentially have infinite time horizons in the sense that they aim to carry out their missions in perpetuity. This gives the endowments that support these institutions the ability to take on risk in their portfolios. At the same time, exposure to assets that generate asset growth is necessary to replenish the annual spending from portfolios and make up for the loss in purchasing power from inflation. For these reasons, endowments tend to allocate most of their portfolios to equity-oriented strategies.

On average, 35.8% of the long-term investment portfolio (LTIP) was invested in long-only public equities and 25.6% was allocated to PE/VC at the end of fiscal year 2022 (Figure 35). However, the range in allocations reported across respondents was extremely wide within these categories. Even after removing the top and bottom 5% of outliers, public equity allocations were as high as 62% at the top end of the universe and as low as 17% at the bottom end. For PE/VC, allocations ranged from 42% at the 5th percentile to 5% at the 95th percentile.

FIGURE 35 SUMMARY ASSET ALLOCATION DISTRIBUTION

As of June 30, 2022 • Percent (%) • n = 158 • By Percentile Ranking



Source: College and university data as reported to Cambridge Associates LLC.

Note: For more information, see page 74 in the Appendix.

Figure 36 shows the breakdown of detailed categories that fall under public equity and PE/VC in our asset allocation framework. On the public side, we collect data based on the primary geographic region that each fund/manager is invested.[5] The highest allocations among the public categories tend to be in US-focused funds, with 16.1% of

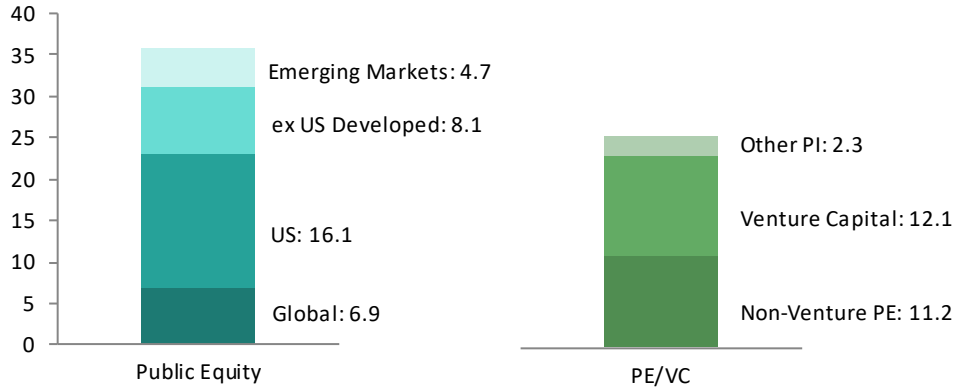
5 We reference investment managers and their funds in our review of asset allocations in this section. However, some endowments gain exposure to these asset classes via internally managed holdings or derivatives. The Investment Manager Structures section of this report contains analysis on how asset allocations are implemented across various strategies.

the average LTIP invested in these strategies. Endowments have meaningful allocations to equities outside of the United States, with an average of 8.1% allocated to funds that primarily invested in global ex US developed regions and another 4.7% invested with dedicated emerging markets funds. Funds that are invested across multiple geographic regions are included in our global category and make up 6.9% of the average LTIP.

The largest average allocation on the private side was to venture capital (12.1%), while the average allocation to non-venture private equity was slightly lower at 11.2%. Non-venture private equity in our framework consists of buyouts and growth equity, which is aligned with the way these strategies are combined in the CA Private Equity indexes. There is a third category called "Other PI," which is reserved for multi-strategy fund-of-funds, secondaries, and other private funds that can't be allocated solely to either of the aforementioned categories. The average allocation to other private investments was just 2.3%.

FIGURE 36 MEAN ASSET ALLOCATION: PUBLIC EQUITY AND PE/VC

As of June 30, 2022 • Percent (%) • n = 158



Source: College and university data as reported to Cambridge Associates LLC.

Elsewhere in the reporting framework, the average allocation to hedge funds was 16.2% (Figure 35). Real assets, which consist of a diversified group of public and private assets, made up 8.9% of portfolios, on average. Fixed income made up 7.2% of the average LTIP, while private credit accounted for just 2.2%. Rounding out the average asset allocation among participants, 3.5% was allocated to cash and 0.6% was allocated to other miscellaneous assets. Average allocations for the more granular asset classes that fall under these broader categories are included in the appendix of this report.

The total asset size of the LTIP has long been a key factor in the variation of asset allocations among endowments. Smaller endowments continue to maintain higher allocations to fixed income and public equities, while larger endowments have the highest allocations to alternative assets. The differences are most noticeable in the breakdown of public equity versus private equity. Endowments with assets less than $200 million had an average allocation of 52.7% to public equity, while those with assets greater than $3 billion had an average of 26.7% (Figure 37). For PE/VC, the largest endowments had an average allocation of 33.7%, while the smallest endowments had an average of 10.8%.

FIGURE 37 MEAN ASSET ALLOCATION BY ASSET SIZE
As of June 30, 2022 • Percent (%)

Asset Size	Public Equity	PE/VC	Hedge Funds	Private Credit	Fixed Income	Real Assets & ILBs	Cash
Less Than $200M *n = 17*	52.7	10.8	13.7	1.0	12.2	5.1	3.5
$200M–$500M *n = 33*	43.8	19.3	15.0	1.8	9.4	5.8	3.7
$500M–$1B *n = 20*	40.7	21.2	14.1	2.9	8.6	9.1	3.2
$1B–$3B *n = 47*	30.1	30.2	18.2	2.6	5.8	9.3	3.7
More Than $3B *n = 41*	26.7	33.7	17.0	2.2	4.2	12.5	3.2
All C&U Mean *n = 158*	35.8	25.6	16.2	2.2	7.2	8.9	3.5

Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 74 in the Appendix.

CHANGES TO ASSET ALLOCATION IN FISCAL YEAR 2022

Endowments report some degree of changes to their actual asset allocations each fiscal year. Some of the changes can be attributed to how the various asset class strategies perform in relation to each other. Asset classes that earned the best performance over the course of a fiscal year often see their piece of the asset allocation pie get bigger, and vice versa for the categories that produce the lowest returns. Beyond market movements, some asset allocation changes can be attributed to rebalancing activity or annual spending draws from the portfolio. Further, there can be changes that are sparked by shifts in a portfolio's long-term asset allocation policy.

The asset allocation changes that the respondent group reported in fiscal year 2022 were larger than what we see in most years. Among the 155 respondents that provided data for the last two fiscal years, the largest overall change was in public equity, which declined by an average of 5.0 ppts. More than half of that decrease in public equity was absorbed by a bump up in PE/VC allocations, which increased by an average of 2.7 ppts. Real assets and hedge funds also saw average increases of 1.4 ppts and 0.8 ppts, respectively, while fixed income and cash allocations ticked up just slightly.

SPECIAL TOPICS IN FISCAL YEAR 2022

Our fiscal year 2022 survey requested information on two special topical areas. First, we asked respondents to report on the exposure to China within their portfolios and whether pausing new investments or divesting altogether was being considered. In addition, we asked endowments what their sentiment was pertaining to investing in blockchain and cryptocurrencies and requested details on their exposure to these assets.

China Exposure

- Most respondents reported that their total exposure was in the single digits in terms of percent of the overall portfolio.
- The vast majority of exposure came from public equity and PE/VC strategies. On average, exposure via public managers was slightly higher than exposure via private managers.
- A little over half of the average exposure came from funds with a global or regional (i.e., multi-country) strategy, while the remainder came from dedicated China managers.
- Only a small percentage of the respondent group are planning to either pause new investments to China or divest from the region altogether.

Blockchain/Crypto Exposure

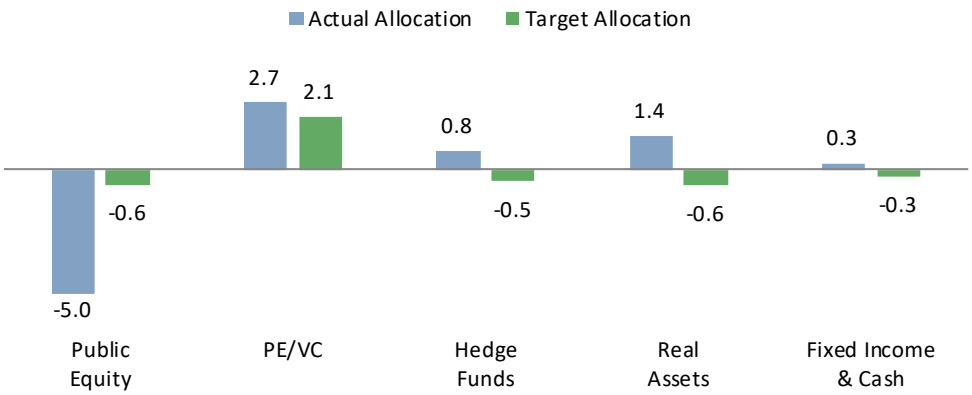
- Only one-quarter of respondents indicated that they did not have an interest in this sector. The remainder of respondents are either already invested or exploring the sector.
- Among the endowments that have made investments, most of the exposure came from private investment funds.
- The vast majority of respondents that have investments reported less than 1% was allocated to these assets.

Recognizing the effort it takes our respondent group to provide this additional information, we are reserving the full recap of data for the institutions that participated in this part of our survey. If you did not provide information but are now interested in the results, please email cainstitute@cambridgeassociates.com for instructions on how to participate.

Figure 38 compares these average changes in actual allocations for fiscal year 2022 to the average changes that were reported in target asset allocations. As covered in the Investment Policy section of this report, target asset allocation frameworks vary among endowments and not all respondents have a dedicated target to each category. Still, these comparisons provide some insight into what role asset allocation policy changes and other factors played in the trend in actual allocations over the last fiscal year. Despite the large average decrease in actual public equity allocations, the average target allocation to these strategies declined just slightly in fiscal year 2022. This indicates that other factors, such as the poor performance from global stock markets, were responsible for most of the decrease in actual allocations over the last year. Conversely, the increase in average real assets allocations were probably driven by the robust returns from inflation-hedging strategies in fiscal year 2022, as the average target allocation to these strategies declined slightly over the last year.

FIGURE 38 1-YR CHANGES IN MEAN ACTUAL AND TARGET ASSET ALLOCATION

June 30, 2021, to June 30, 2022 • Percentage-Point Increase or Decrease



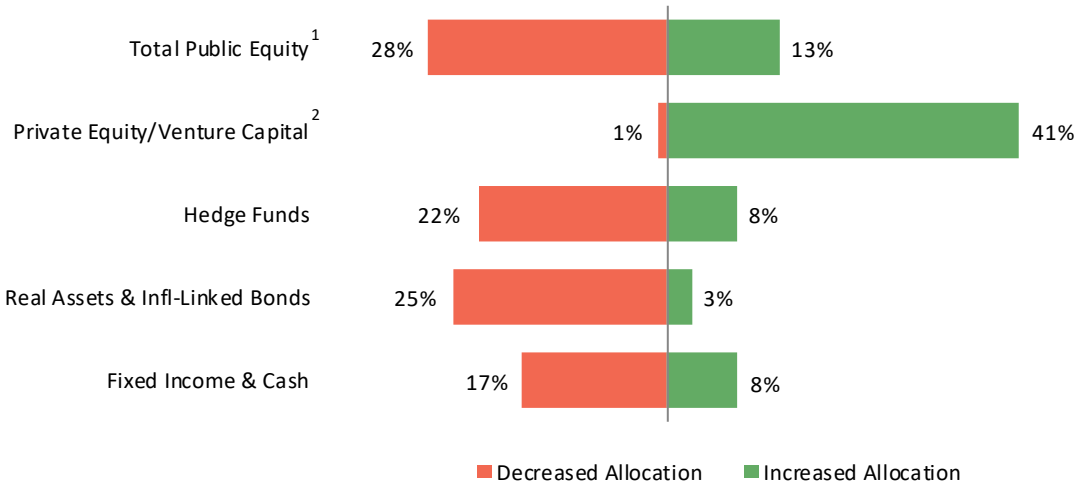
Source: College and university data as reported to Cambridge Associates LLC.

Notes: The actual allocation statistics are based on 155 respondents that provided data for each of the last two fiscal years. The number of respondents for the target allocation statistics varies across each category. PE/VC includes institutions that combine these strategies with other private investments in a single category.

Figure 39 shows the percentage of endowments that increased or decreased their target allocations in fiscal year 2022 across the main asset class strategies. PE/VC continues to be the category where endowments are overwhelmingly most likely to increase their policy allocations. Almost half (41%) of respondents reported an increase to their target, while just 1% reported a decrease. Within each of the other asset classes, there were more endowments that reported a decrease than there were that reported an increase. Public equity was the category that saw the most decreases, with 28% of respondents lowering their target in fiscal year 2022.

FIGURE 39 CHANGES IN TARGET ASSET ALLOCATION

June 30, 2021 – June 30, 2022 • Percentage of Institutions Increasing or Decreasing Targets



Source: College and university data as reported to Cambridge Associates LLC.

[1] Total public equity excludes institutions that combine public equity together with PE/VC in a single equity category.

[2] Private equity/venture capital includes institutions that include PE/VC together with other private investments in a single category.

LONG-TERM ASSET ALLOCATION TRENDS

Institutional investors that have adopted the endowment model of investing have seen significant shifts in their asset allocation policies over the last few decades. Exposure to bonds has decreased substantially, while the equity allocation—which once was invested overwhelmingly in US public equities—has become more diversified. The largest endowments pioneered this transition in the 1980s, with the trend spreading among other institutions in the 1990s and early 2000s. Looking back 20 years ago to 2002, the seeds of those diversification trends had already sprouted for many institutions in this study's universe (Figure 40). In the next few paragraphs, we highlight trends in the average asset allocation of the 82 endowments that provided data over the last two decades.

PUBLIC EQUITY. By 2002, public equity accounted for slightly less than half of the average portfolio for this universe. The average allocation changed little over the next few years before plunging at the onset of the GFC in 2008 and bottoming out in 2009. Allocations to public equities rose for most endowments post-GFC up until 2017, but have been on a downward trend since, including a steep drop during this most recent year.

PE/VC. Although the trend graph does not show it, PE/VC allocations surged at the height of the dot-com boom in 2000 for institutions that had made investments to these strategies. Allocations pared back a bit with the bursting of the dot-com bubble, and the average for this universe was approximately 7% in 2002 where our trend analysis begins. The average allocation then doubled to 14% by 2010 but remained within a relatively narrow range for a number of years and finished 2017 at the same level. Spurred on by excellent performance and rising policy targets to these strategies among endowments, the average allocation has exploded in recent years and stood at 28% for this constant universe group at the end of the fiscal year 2022.

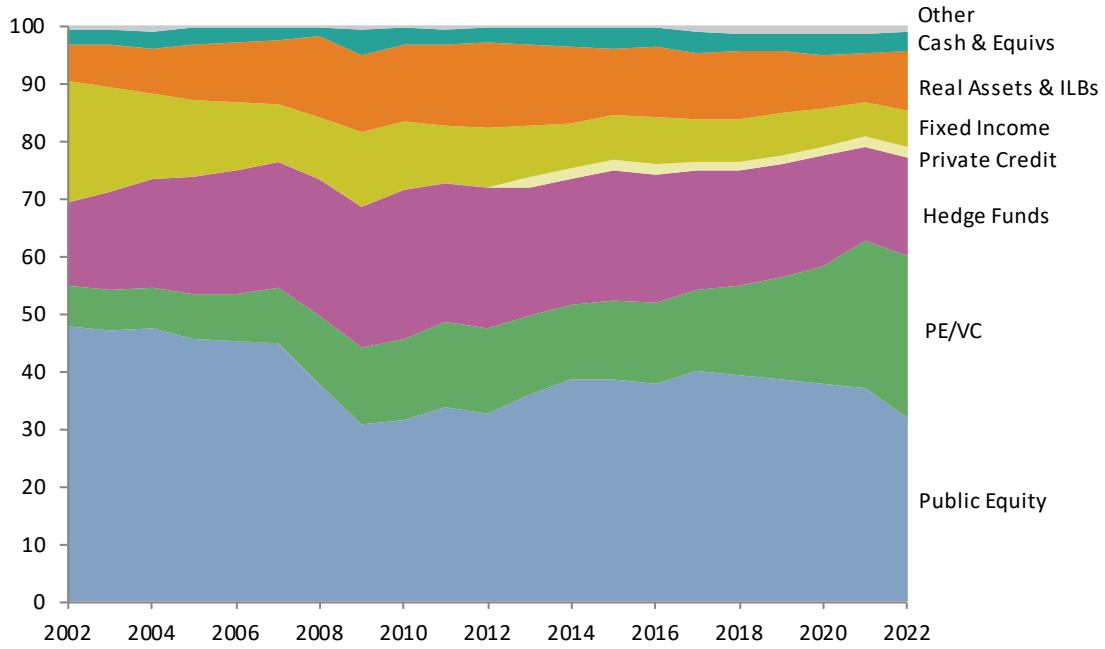
HEDGE FUNDS. Endowments had already established meaningful allocations to hedge funds in 2002, with the average among this group standing at 14%. These strategies experienced the greatest increase in allocations throughout the 2000s, with the average peaking at 25% in 2010. The average allocation has trended back down since that 2010 peak and has declined year-over-year in nine of the last 12 fiscal years.

REAL ASSETS. Allocations to real assets also grew substantially over the first half of this historical period. From 2002 to 2012, the average real assets allocation more than doubled from 6% to 15%. However, that average trended back down over much of the past decade as a low inflationary period led to mediocre returns and endowments pulled back on targets to these strategies. Of course, the exception from a performance perspective was this past fiscal year, as a spike in inflation boosted the returns of these strategies, and, in turn, the allocations of most respondents.

FIXED INCOME. Traditional fixed income strategies still made up a significant percentage (21%) of the average portfolio 20 years ago. However, these allocations have trended downward over most of the last two decades and stood at an average of just 6% for the constant group at the end of 2022. Allocations to absolute return hedge funds, credit hedge funds, and private credit strategies have grown over the last 20 years, although not to the magnitude that completely offsets the decline reported in traditional fixed income allocations.

FIGURE 40 HISTORICAL MEAN ASSET ALLOCATION TRENDS

Years Ended June 30 • Percent (%) • n = 82



Source: College and university data as reported to Cambridge Associates LLC.

Note: For more information, see page 75 in the Appendix.

UNCALLED CAPITAL COMMITMENTS TO PRIVATE INVESTMENTS

One of the core principles of the endowment model is the use of private investments that, in part due to their illiquid nature, offer the potential for higher long-term returns than those of public or marketable assets. As our analysis in this section has shown, endowments have been allocating an increasingly significant portion of their portfolios to private investments. As of the end of fiscal year 2022, the average total private investment allocation for the overall participant group was 35%. For endowments greater than $3 billion, the average allocation was even larger and represented nearly half of the portfolio (47%).

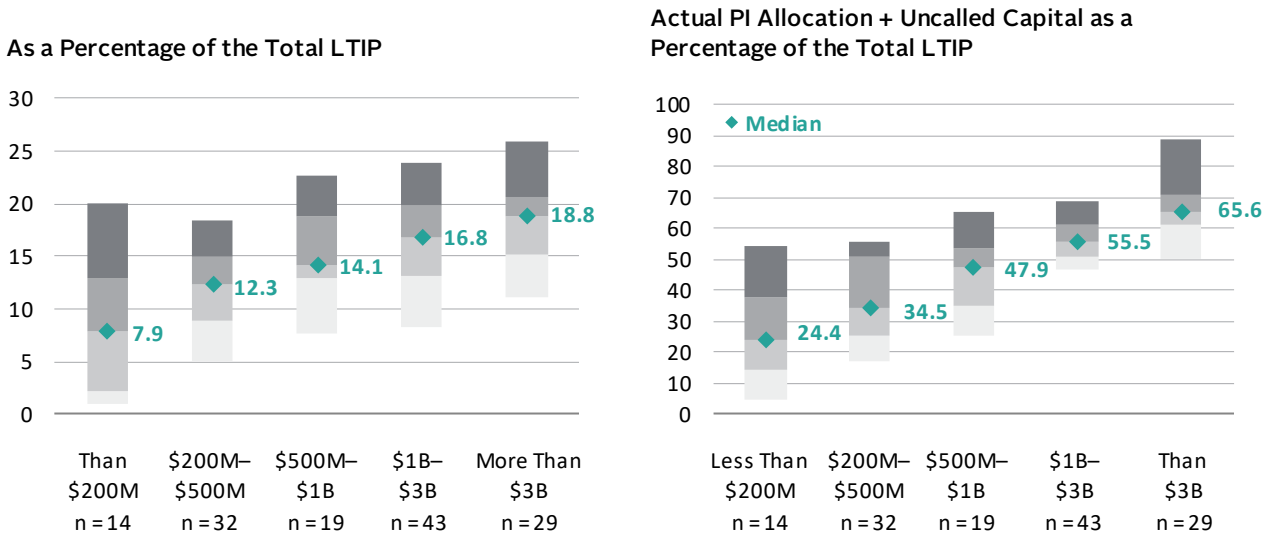
Uncalled capital commitments represent the amount of capital that endowments have agreed to pay into private investment funds in the future. While annual spending distributions have traditionally made up the biggest liquidity need for endowments, growing allocations to private assets have resulted in uncalled capital also representing an important piece of the liquidity picture. Whether an endowment is ramping up private allocations or simply maintaining an already high allocation, the amount of uncalled capital is significant when measured versus the total value of the portfolio for most participants in this study.

Uncalled capital commitments as a percentage of the total LTIP tends to be higher for larger endowments than it is for smaller endowments. The median ratio for endowments greater than $3 billion was 18.8%, which was double the median ratio (7.9%) calculated for endowments less than $200 million (Figure 41). The difference was even more stark when combining the amount of uncalled capital with the actual private

investment allocation and expressing that as a percentage of the LTIP. For endowments greater than $3 billion, the median ratio for this equation was 65.6%. In contrast, the median ratio was 24.4% for endowments less than $200 million.

FIGURE 41 UNCALLED CAPITAL COMMITTED TO PRIVATE INVESTMENT FUNDS

As of June 30, 2022 • Percent (%) • By Percentile Ranking

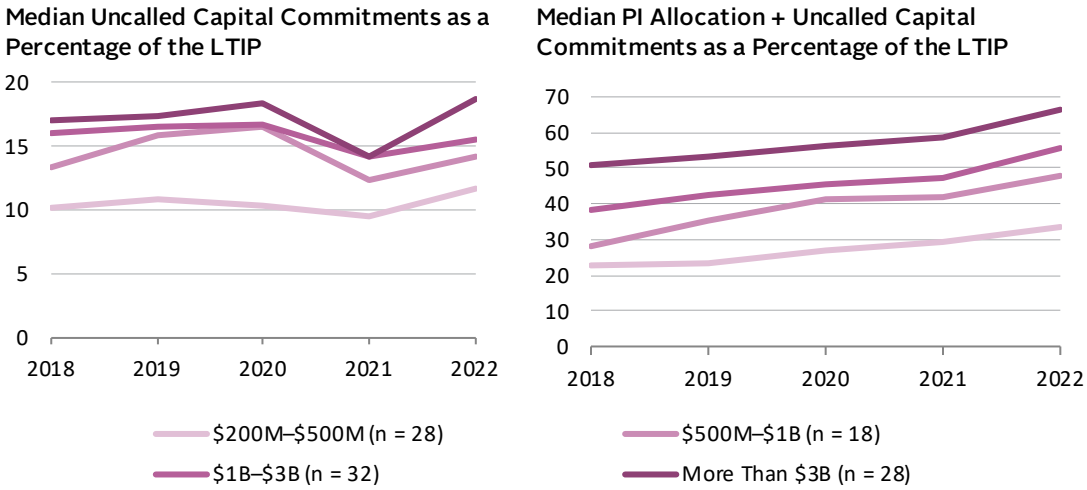


Source: College and university data as reported to Cambridge Associates LLC.
Note: For more information, see page 76 in the Appendix.

Figure 42 shows the trend in these two ratios over the last five fiscal years for the various asset size cohorts. There were large swings in the ratio of uncalled capital to the LTIP market value over the last two fiscal years. In fiscal year 2021, the ratio decreased sharply because the rate of asset growth was much higher than the growth in uncalled capital for most endowments. Essentially, the amount of uncalled capital, although growing for most institutions, became smaller in relation to the overall portfolio value after the extraordinary performance of 2021. The opposite dynamic was in effect fiscal year 2022, a period where endowments lost value but most continued to see their uncalled capital commitments grow.

The ratio that combines the actual private investment allocation with the amount of uncalled capital has seen more of a steady increase over time. For most endowments, the actual private allocations make up the majority of the combined amount that represents the numerator in the ratio equation. The boom in illiquid allocations in recent years, especially in PE/VC, meant that this particular ratio did not experience the dip in fiscal year 2021 that the former ratio did. Across all asset size cohorts, the combined amount of the current private allocation plus uncalled capital commitments was substantially higher at the end of fiscal year 2022 than it was five years earlier.

FIGURE 42 TREND IN UNCALLED CAPITAL COMMITMENTS TO PRIVATE INVESTMENT FUNDS
Years Ended June 30 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.
Note: The endowments less than $200 million group is excluded from this analysis because there was an insufficient number of respondents that provided data over the full five-year period.

Almost two-thirds of respondents (64%) reported their private investment program was cash flow positive, meaning that the amount of distributions from private funds exceeded the amount of new capital paid in. The smallest endowments were the least likely report that their programs were cash flow positive, with 46% of those less than $200 million falling in this camp. The largest endowments, which generally have more mature private programs, were the most likely to answer "yes" to this question. Slightly more than three-quarters (76%) or endowments greater than $3 billion reported that their programs were cash flow positive.

Section 4: Investment Manager Structures

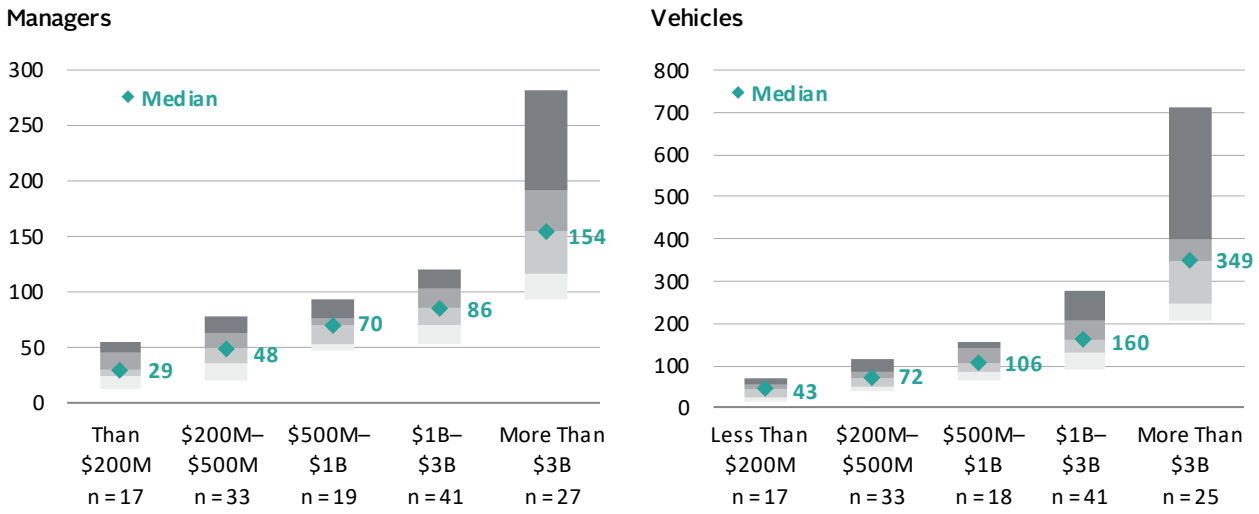
NUMBER OF EXTERNAL MANAGERS

Most of the assets under management at endowments are invested via external investment managers. There are multiple factors that contribute to the number of managers employed within an endowment's portfolio. The scale of total assets under management is the primary factor, as larger endowments generally spread their assets across a greater number of managers compared to smaller endowments. Among endowments greater than $3 billion, the median number of investment managers was 154 (Figure 43). At the opposite end of the asset size spectrum, the median for endowments less than $200 million was just 29 managers.

Our survey also asked about the number of vehicles invested in by endowments. For the purposes of our analysis, an investment vehicle represents a fund, product, or separate account that is managed by an investment manager. Endowments often invest in multiple investment vehicles of the same manager, particularly when it comes to private investment funds. Therefore, the number of vehicles endowments are invested in is much higher than the number of managers. The median number of vehicles ranged dramatically from 349 for endowments greater than $3 billion to 43 for endowments less than $200 million.

FIGURE 43 NUMBER OF EXTERNAL MANAGERS AND INVESTMENT VEHICLES

As of June 30, 2022 • Percent (%) • By Percentile Ranking



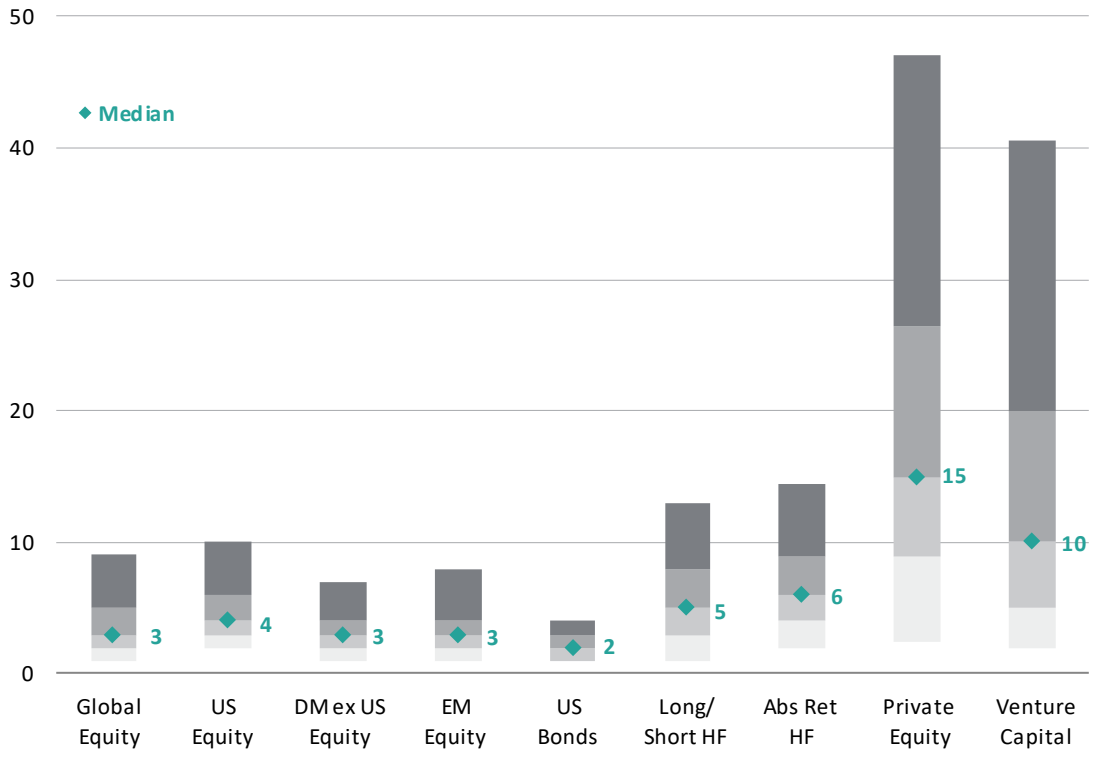
Source: College and university data as reported to Cambridge Associates LLC.

Note: For more information, see pages 77 and 78 in the Appendix.

Even within the broad asset size groups, the range of managers employed can be wide. Among the smallest endowments, the number of managers employed at the 25th percentile (46) is almost double the number used at the 75th percentile (24). For portfolios greater than $3 billion, 281 managers are employed at the 5th percentile, compared to just 93 at the 95th percentile. Much of the variation can be attributed to the management of alternative asset classes. Figure 44 shows the range in number of managers across endowments for a several asset classes. The dispersion in the number

of alternative asset managers employed, particularly within private investments, is much wider than that of the more traditional equity and bond asset classes. Further detail on these and other asset classes are provided for the five broad asset size groups in the Appendix of this report.

FIGURE 44 DISPERSION IN NUMBER OF MANAGERS FOR SELECTED ASSET CLASSES
As of June 30, 2022 • By Percentile Ranking



Source: College and university data as reported to Cambridge Associates LLC.
Notes: Only those institutions with an allocation to the specific asset class have been included. Funds-of-funds are counted as one manager. For more information, see pages 77 and 78 in the Appendix.

ASSET CLASS IMPLEMENTATION

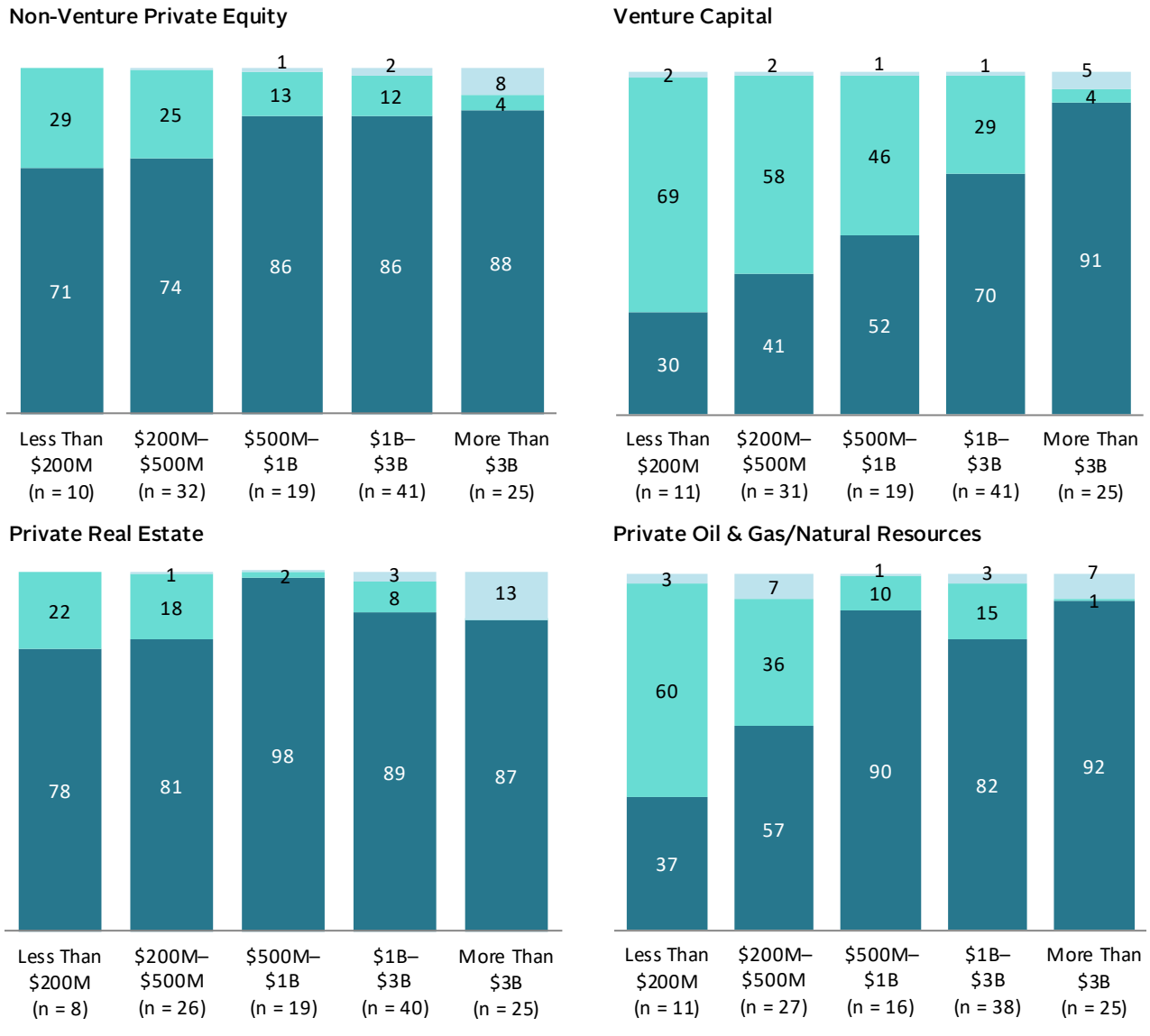
HEDGE FUNDS. There are two primary types of investment vehicles that endowments use when implementing their hedge fund allocations. A single manager fund is a type of investment vehicle where the investment manager makes the decisions for the securities and assets held within the fund. In contrast, a fund-of-funds is a type of strategy where the investment manager invests in a collection of other investment funds. On average, more than 90% of the average hedge fund allocation is implemented via single manager funds. The implementation approach for hedge funds varies little across the various asset sizes, as both larger and smaller endowments alike overwhelmingly use single manager hedge funds.

PRIVATE INVESTMENTS. Endowments also have single manager funds and fund-of-funds at their disposal when implementing private investment allocations. In addition, some endowments make direct investments in private strategies. Direct investments can take the form of co-investments that are made alongside a general partner or solo investments that are originated by the endowment itself.

Compared to hedge funds, implementation practices are a little more varied across private investment asset classes. This is most evident in venture capital and private natural resources, where fund-of-funds are far more common among smaller endowments than they are for larger C&Us. On average, more than 60% of the average venture capital and natural resources allocations for endowments less than $200 million are implemented via fund-of-funds. In contrast, fund-of-funds make up just a tiny percentage of the average allocations for endowments greater than $3 billion. Figure 45 shows the average breakdown of allocations by implementation category for other private strategies. Private credit strategies are not included in this exhibit, as endowments across all asset sizes rely almost exclusively on single manager funds to implement these allocations.

FIGURE 45 PORTFOLIO IMPLEMENTATION: PRIVATE INVESTMENTS

As of June 30, 2022 • Equal-Weighted Means (%)



Source: College and university data as reported to Cambridge Associates LLC.

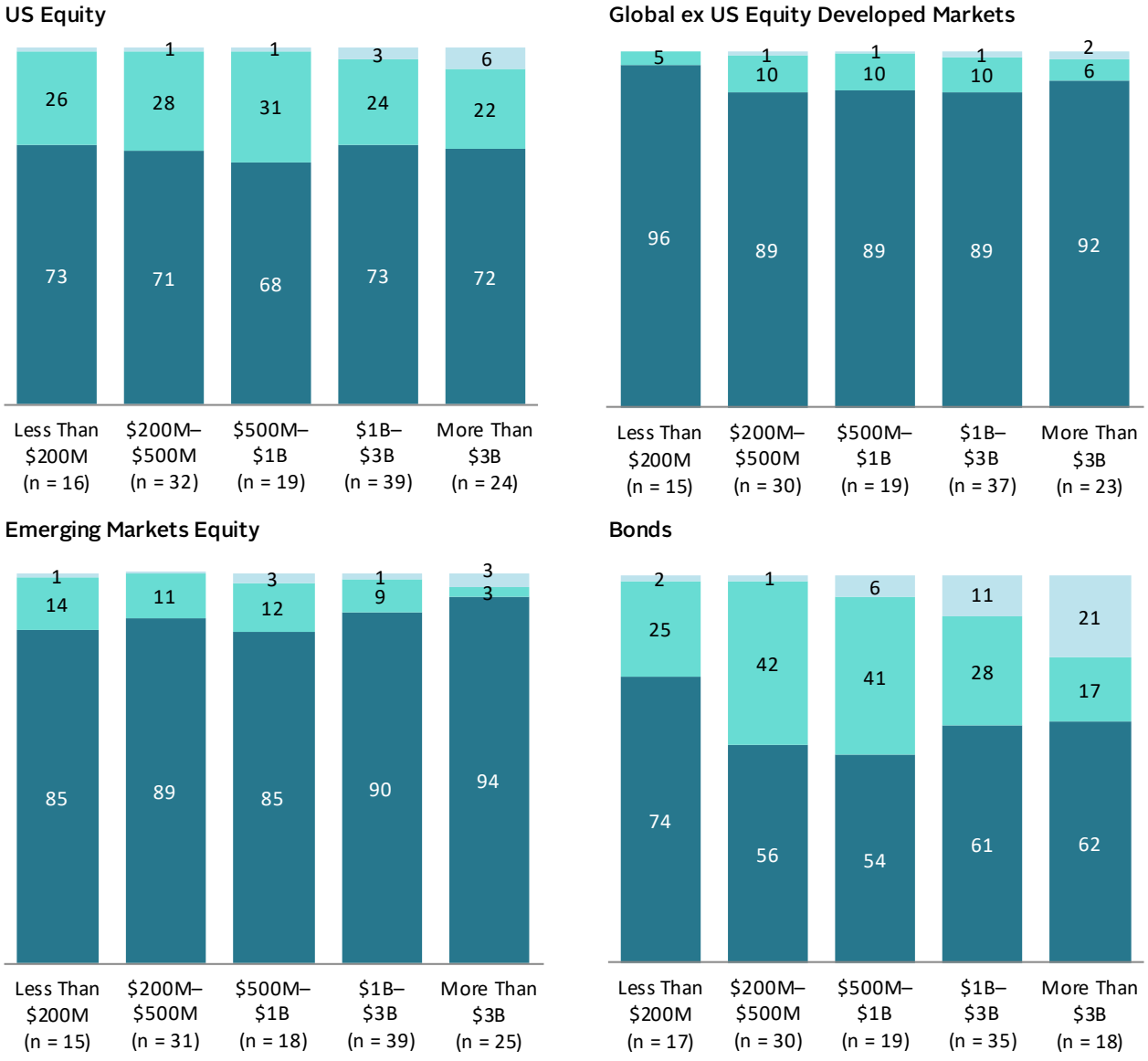
Note: Analysis shows the average allocation of assets across the implementation categories for each peer group.

PUBLIC EQUITIES AND BONDS. For traditional bonds and equities, endowments primarily use external managers to implement their allocations. These assets are invested either through active or passively managed investment vehicles. Some endowments also manage assets internally or use derivatives to achieve desired exposures.

When considering the average breakdown of US equity allocations, the majority of assets are invested via active managers (Figure 46). The proportion of US allocations invested through active managers is similar across all asset size groups. For global ex US equities, the average proportion of allocations invested through active managers is higher. In bonds, passive management was most common among endowments between $200 million and $1 billion as more than 40% of the average allocation was invested under this approach. The percentage was lowest for endowments greater than $3 billion at 17%.

FIGURE 46 PORTFOLIO IMPLEMENTATION: TRADITIONAL EQUITIES AND BONDS

As of June 30, 2022 • Equal-Weighted Means (%)



Source: College and university data as reported to Cambridge Associates LLC.

Note: Analysis shows the average allocation of assets across the implementation categories for each peer group.

Section 5: Institutional Support

ENDOWMENT DEPENDENCE

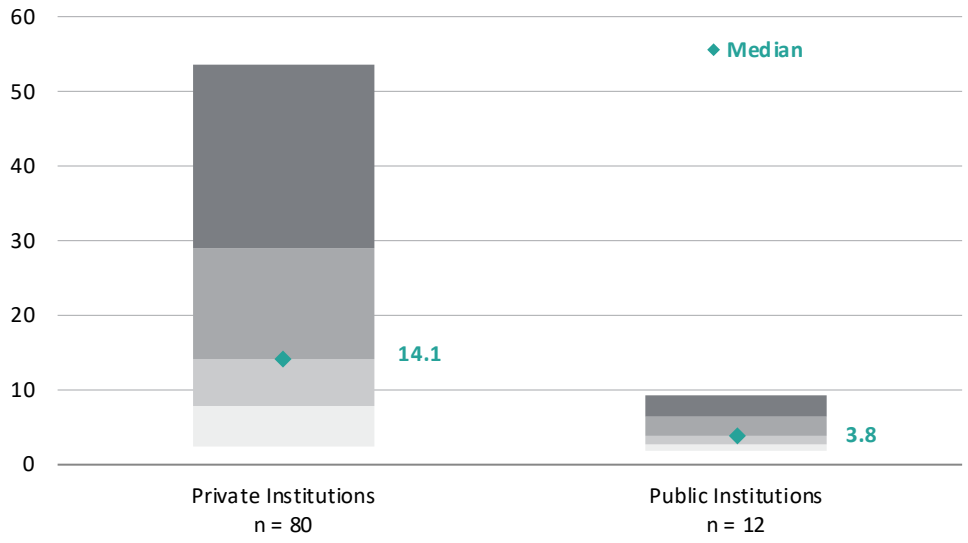
Most colleges and universities receive the majority of their revenue from operations (instruction, research, student housing, food services, patient care, etc.). However, since tuition, auxiliary, and research revenue do not fund all their costs, institutions depend on endowment distributions and gifts for additional support. The median ratio of endowment support–to-operating budget for private colleges and universities was 14.1% in fiscal year 2022 (Figure 47). The range of endowment dependence varied considerably among private institutions, ranging from 2.3% at the 95th percentile to 53.5% at the 5th percentile.

For a constant group of private institutions that provided historical data, the endowment dependence ratio was down a couple of percentage points from what was reported in 2021 (16.0%), but in line with what was reported in 2020 (13.8%). In fiscal year 2021, operating costs—the denominator in the ratio—had declined due to institutions' responses to the COVID-19 pandemic. The decline in costs in 2021 led to the ratio spiking up that year, as the amount of endowment support was matched against a shrinking operating budget in the ratio calculation.

In addition to student and research revenue, public institutions receive financial support from state appropriations, and, as a result, endowment distribution generally funds less of the operating budget compared to private institutions. For the public institutions that provided data, the median endowment dependence was 3.8% in fiscal year 2022.

FIGURE 47 ENDOWMENT DEPENDENCE

Fiscal Year 2022 • Percent (%) • By Percentile Ranking



Source: College and university data as reported to Cambridge Associates LLC.

Note: For more information, see page 79 in the Appendix.

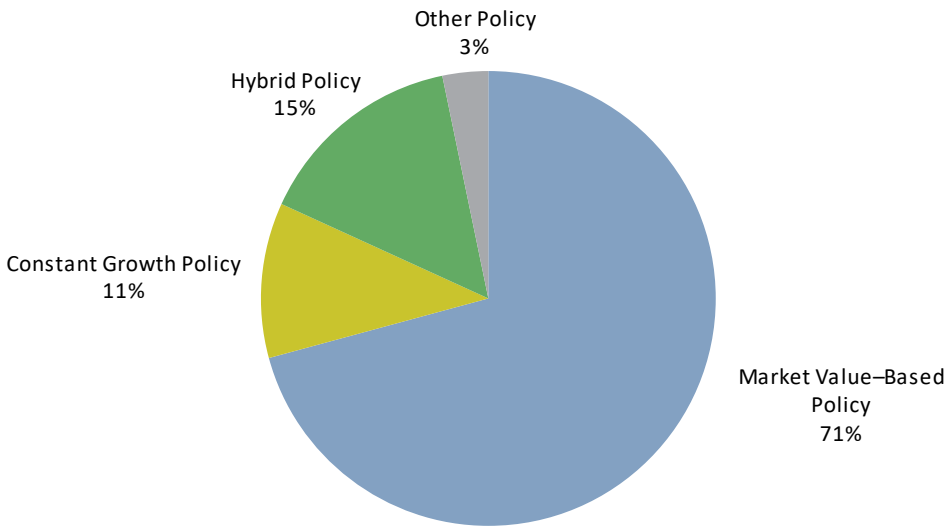
SPENDING POLICIES

An institution's endowment spending policy serves as a bridge that links the investment portfolio and the enterprise. The policy provides a basis for the calculation of the annual distribution from the endowment. Spending policies are designed to balance the needs of current and future generations of stakeholders, with the goals of providing appropriate levels of support to operations and preserving—or even growing—endowment purchasing power.

The majority (71%) of responding institutions continue to use a market value–based rule, which dictates spending a percentage of a moving average of endowment market values (Figure 48). By using a target spending rate, this rule type links the spending distribution amount directly to the endowment's market value. The annual distribution will grow in periods when portfolio values trend upward and decrease after periods when portfolio values experience significant declines. By curtailing spending after the market value declines, this rule type places an emphasis on preserving the endowment's purchasing power.

FIGURE 48 SPENDING RULE TYPES

Fiscal Year 2022 • n = 154



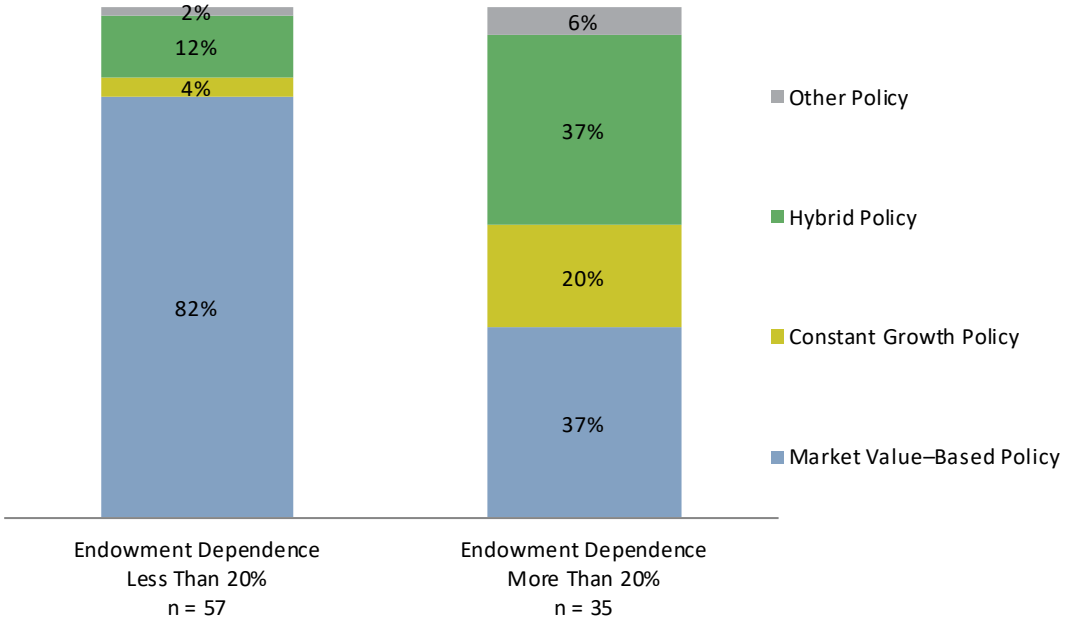
Source: College and university data as reported to Cambridge Associates LLC.

Approximately 11% of respondents use a constant growth rule. This rule type increases the prior year's spending amount by a measure of inflation and/or a prespecified percentage. Institutions tend to use this rule type when the endowment is a significant source of operating revenue and volatility in annual spending distributions is less tolerable. Though the strict application of a constant growth rule produces predictable spending, most institutions using this rule type impose a spending cap and floor based on a percentage of the endowment's market value or a moving average of market values. Spending collars essentially transform the constant growth rule to a market value–based rule in times of significant endowment growth or contraction to avoid a complete disconnect between spending and the endowment market value.

Another 15% of respondents use a hybrid spending rule, which blends the more predictable spending element of a constant growth policy with the asset preservation principle of a market value–based policy. It allows an institution to set the appropriate mix that best meets its needs. The rule is expressed as a weighted average of a constant growth rule and a market value rule. A hybrid rule essentially has the effect of spending a percentage of an exponentially weighted average market value that is adjusted for inflation.

The level of endowment dependence seems to be a key factor that institutions consider when setting an appropriate spending policy. A market value–based rule was used by the vast majority (82%) of respondents with endowment dependence ratios below 20% (Figure 49). However, practices are more varied among institutions with endowment dependence ratios above 20%. The market value–based policy and the hybrid policy were the most commonly cited rule types among this latter group (37%), followed by the constant growth (20%) policy. The more predictable stream of spending dollars presumably makes the constant growth and hybrid rules appealing to institutions with higher endowment dependence.

FIGURE 49 SPENDING RULE TYPES BY ENDOWMENT DEPENDENCE
Fiscal Year 2022 • Percent (%)

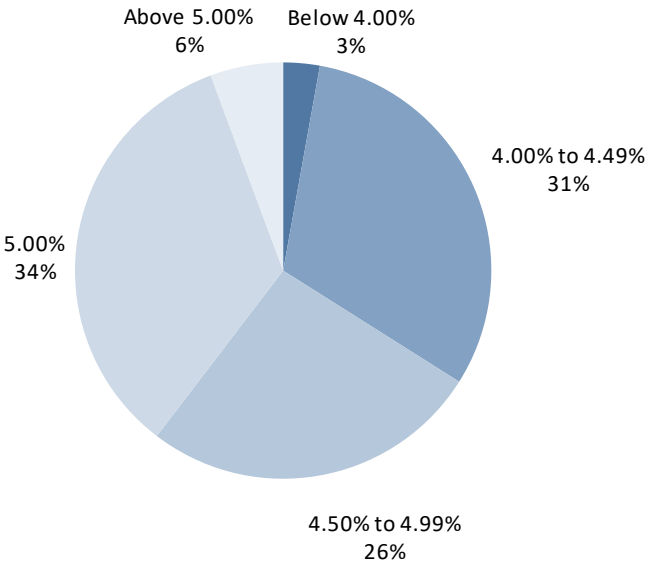


Source: College and university data as reported to Cambridge Associates LLC.

TARGET SPENDING RATES. A market value–based rule dictates spending a percentage of the endowment's market value, which is most often represented by a moving average over a smoothing period. A prespecified target spending rate is applied to the average market value to determine how much of the endowment should be distributed on an annual basis. Some institutions with a market value–based policy allow some discretion by setting a prespecified range within which the target spending rate may fall. For the purposes of comparing target spending rates in our analysis, we assume the midpoint for institutions that use a discretionary range.

The target spending rate for most endowments in this study lies somewhere between 4% and 5%. The most common spending rate continues to be 5% and was reported by approximately one-third of respondents. A slightly smaller percentage of institutions (31%) use a rate that falls between 4% and 4.49%, while another 26% of respondents use a rate that falls between 4.5% and 4.99% (Figure 50).

FIGURE 50 TARGET SPENDING RATES FOR MARKET VALUE–BASED RULES
Fiscal Year 2022 • n = 106



Source: College and university data as reported to Cambridge Associates LLC.

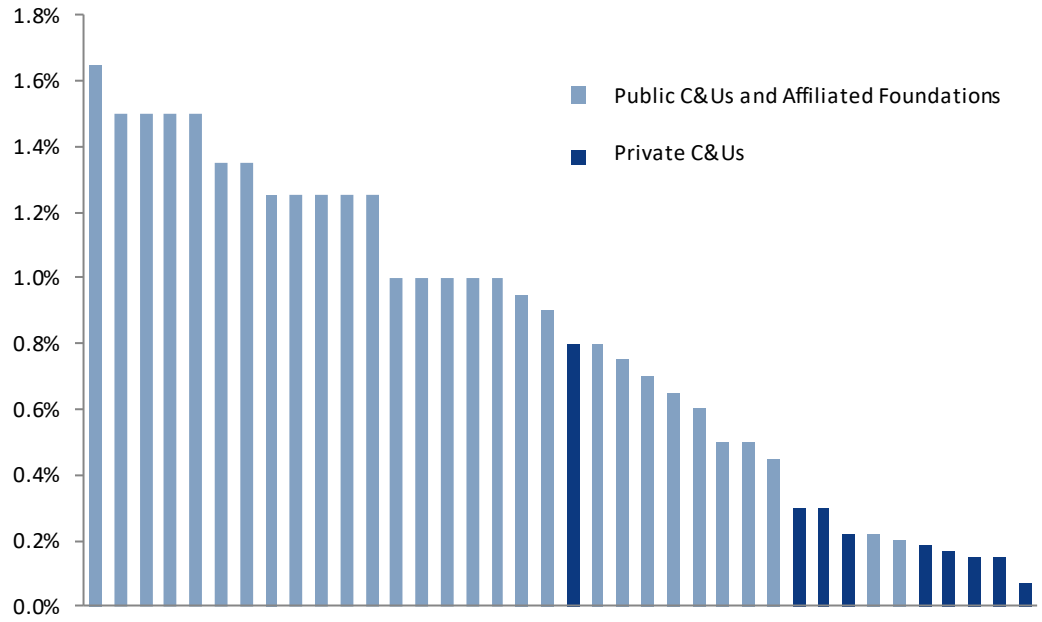
Most endowments with a market value–based rule keep their target spending rate consistent from one year to the next. However, over the long term, there are many that do make changes. Of the 57 institutions that reported policy data in both 2012 and 2022, just under half (44%) used a different target spending rate in 2022 compared to ten years prior. Approximately one-third (32%) of respondents decreased their target spending rate over this time period, while 12% have increased their rate.

ADMINISTRATIVE FEES. In addition to supporting the university's annual operating budget, some institutions may assess a fee on the endowment and other assets under management that goes beyond the spending policy distribution. The assessment, known as an administrative fee, covers internal investment management costs and, in many instances, can also pay for expenses related to fundraising. In the case of a separate management company or affiliated foundation, the administrative fee funds the cost of operating that organization. Of the 38 institutions that reported an administrative fee, 29 were public universities or affiliated foundations and nine were private universities.

The wide range of fees reported among respondents can be attributed to the level of services provided as well as the amount of assets under management. In instances where the fee covers both internal investment management costs and fundraising expenses, the rate will be higher compared to other instances where the fee solely

covers investment costs. When it comes to comparing similar organizations like affiliated foundations, our data show that larger asset pools tend to charge lower fees than smaller asset pools. While the median fee for public universities and affiliated foundations was 1.0%, the actual rates ranged from 0.2% on the low end to 1.65% on the high end. The administrative fee for the nine private universities that provided data ranged from 0.1% to 0.8%, with a median of 0.2% (Figure 51).

FIGURE 51 ADMINISTRATIVE FEES CHARGED TO THE ENDOWMENT
Fiscal Year 2022 • n = 38



Source: College and university data as reported to Cambridge Associates LLC.

NET FLOW RATE

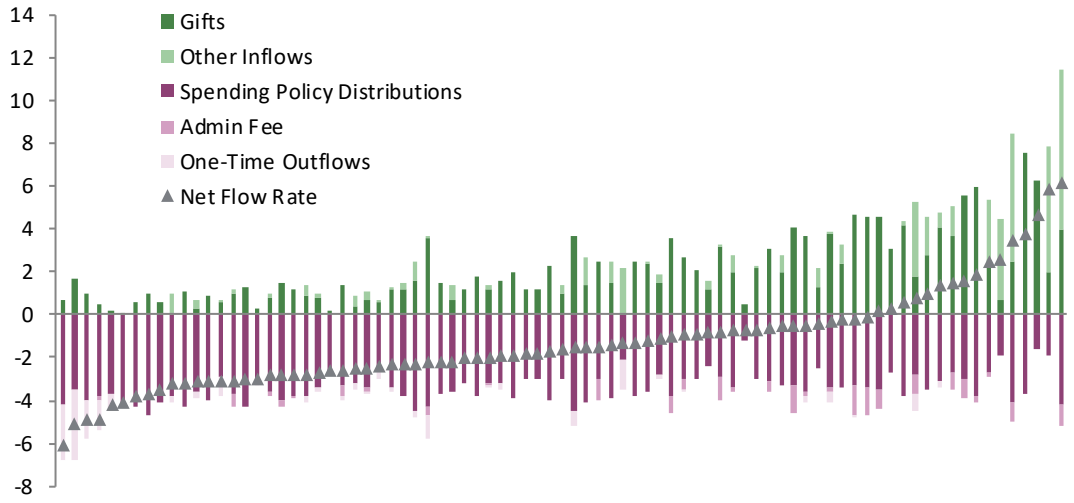
The combination of the total outflows (spending and other appropriations) and inflows (gifts and other additions) for the portfolio constitutes the net flow rate. The net flow rate is calculated as a percentage of the LTIP market value at the beginning of the fiscal year. Net flow can lend insight into the liquidity needs of the portfolio. As is typically the case, the average net flow rate among participants was negative (-1.3%) in fiscal year 2022, meaning the amount of withdrawals from the portfolio surpassed the amount of additions for most respondents. The average outflow rate was -3.8%, while the average inflow rate was 2.6%.

Inflows are mainly driven by endowed gifts and are represented by the dark green shading in Figure 52. On average, gifts represented 77% of total inflows received among participants in fiscal year 2022. Some institutions receive additional inflows from operations or other sources, which is represented by the light green shading. The endowment spending policy distribution (dark pink shading) represents the biggest portion of outflows, while other recurring spending and one-time appropriations (lighter pink shadings) make up a smaller portion. On average, spending policy distributions represented 89% of total outflows in fiscal year 2022.

Public colleges and universities had a higher average net flow rate (0.0%) in fiscal year 2022 compared to private institutions (-1.7%). This was attributable to both aspects of the net flow calculation. This was attributable to the inflow component of the calculation, as the average outflow rates for public and private institutions were nearly identical. Public institutions had an average inflow rate that was nearly double the average for private institutions (4.0% vs 2.1%).

FIGURE 52 NET FLOW RATES FOR FISCAL YEAR 2022

Percent (%) • n = 83



	All C&U Mean	Private C&U Mean	Public C&U Mean
Outflow Rate	-3.8	-3.8	-3.9
Inflow Rate	2.6	2.1	4.0
Net Flow Rate	-1.3	-1.7	0.0
n	*83*	*62*	*21*

Source: College and university data as reported to Cambridge Associates LLC.

Figure 53 shows the average net flow rate for the 34 participants that provided a detailed breakdown of flows over the last five years. The average rates track within a relatively narrow band over this five-year period, ranging from a low of -2.4% to a high of -1.7%. Both the average inflow rate and outflow rate were considerably lower in fiscal year 2022 compared to the previous year. This was predominately because the denominator of the ratio, the beginning portfolio market value, increased significantly after the extraordinary investment returns of fiscal year 2021.

FIGURE 53 HISTORICAL AVERAGE NET FLOW RATES

Fiscal Years 2018–2022 • n = 34

	2018	2019	2020	2021	2022
Outflow Rate	-4.9	-4.9	-4.8	-5.1	-3.9
Inflow Rate	3.1	3.2	2.3	3.1	2.2
Net Flow Rate	-1.8	-1.7	-2.4	-1.9	-1.7

Source: College and university data as reported to Cambridge Associates LLC.

The evaluation of endowment health is often focused on the relationship of investment performance and endowment spending, which is also known as the payout or outflow rate. A key objective has been to achieve real investment returns that exceed the average annual payout rate over the long term. However, institutions often expand programs and facilities so that budgets grow at a faster rate than inflation, thus necessitating additional endowment growth to maintain the endowment's role in the enterprise. Evaluating the net flow rate along with traditional investment performance metrics is important to ensuring that the portfolio keeps up with enterprise growth and maintains its role in supporting the institution.

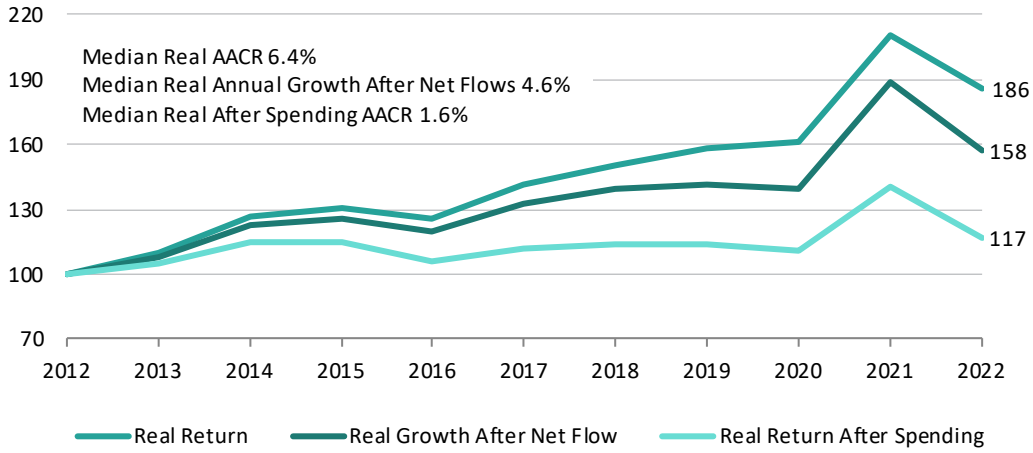
Figure 54 is based on median data for the group of participants that provided returns, LTIP market values, and spending rates over the last decade. It demonstrates the overall upward trend in portfolio values over the full period, but also the volatility of the most recent years. Using median investment performance and starting with an initial investment of $100 in 2012, the median portfolio would have increased 86% on an inflation-adjusted basis by the end of fiscal year 2022, growing to $186 in real dollars. This overall growth is notable, but lower than the peak which was logged in 2021. After deducting the annual spending distributions from real investment performance, the median portfolio would have ended the ten-year period with $117. The real after spending value is much smaller than the statistic based purely on performance, but it still would have resulted in real growth over this period.

There is one more important part of the asset growth picture. The LTIP market value and purchasing power is also driven by inflows that come in as gifts and other funds designated for long-term investment. In the same figure, the median real growth of the LTIP value—which includes both investment performance and total net flows—is tracked by the middle line and grew by 58% over the ten-year period. Because of the

steady inflow from gifts and other additions that most institutions experienced, the actual growth in the portfolio was substantially higher than growth based on returns after spending only. Since maintaining the purchasing power of existing endowment gifts is a key objective in endowment management, the traditional return after spending statistic should not be dismissed. However, this statistic can understate the actual extent of asset growth and the endowment's capacity to support a growing enterprise. By incorporating real investment performance with the overall net flow rate, an institution can better evaluate the trajectory of the LTIP's role in the institution's business model.

FIGURE 54 CUMULATIVE DOLLAR GROWTH AFTER INFLATION, NET FLOWS, AND SPENDING

Years Ended June 30 • Base Year 2012 = $100 • n = 74



Source: College and university data as reported to Cambridge Associates LLC.

ASSET COMPOSITION

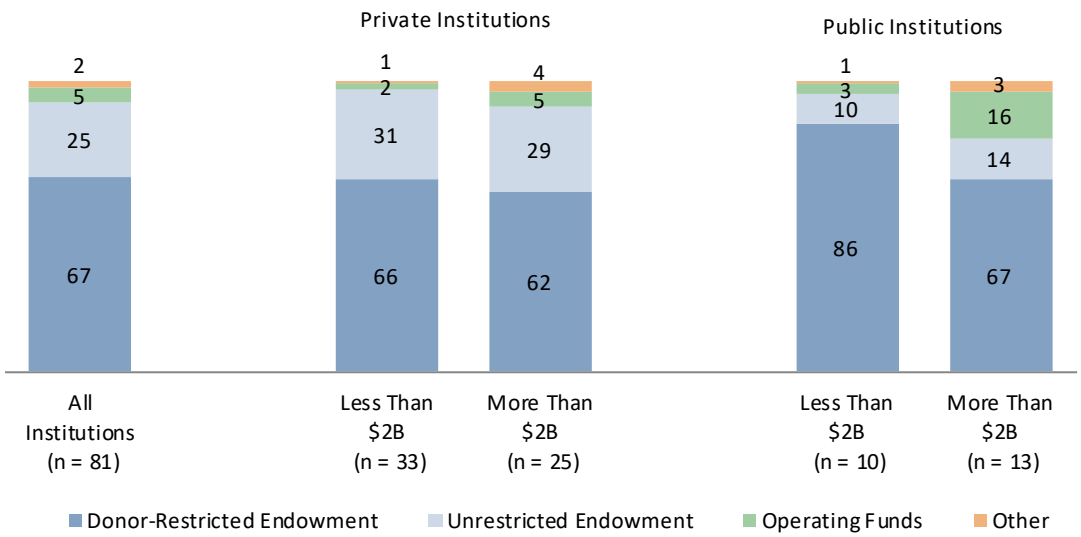
While the terms long-term investment pool and endowment are often used interchangeably, they are not synonymous. Understanding the types of assets that come together in the LTIP is important to understanding the portfolio's role and investment profile.

LONG-TERM INVESTMENT PORTFOLIO. The LTIP is the group of assets for which institutions report their asset allocation and returns in this study. Endowment assets consist of all or the vast majority of the LTIP for most respondents. On average, 92% of the LTIP were endowment assets as of June 30, 2022 (Figure 55). The endowment portion can further be broken down into donor-restricted (67%) and unrestricted (25%). The portion that is classified as unrestricted endowment is lower at public colleges and universities compared to private institutions.

In addition to endowment assets, many institutions invest a portion of their operating funds and/or other assets in the LTIP. On average, operating funds and other assets represented 5% and 2% of the LTIP, respectively. Examples of other assets in the LTIP include life income and annuity funds, special purpose funds, and assets invested by external organizations. The average composition of the LTIP is mostly similar when the respondent group is broken down across public and private institutions in different size bands. Public institutions with portfolios greater than $2 billion tend to have a higher proportion of non-endowment assets in their LTIP compared to other peers.

FIGURE 55 COMPOSITION OF LONG-TERM INVESTMENT PORTFOLIO

Equal-Weighted Means as of Fiscal Year-End 2022 • Percent (%)



Source: College and university data as reported to Cambridge Associates LLC.

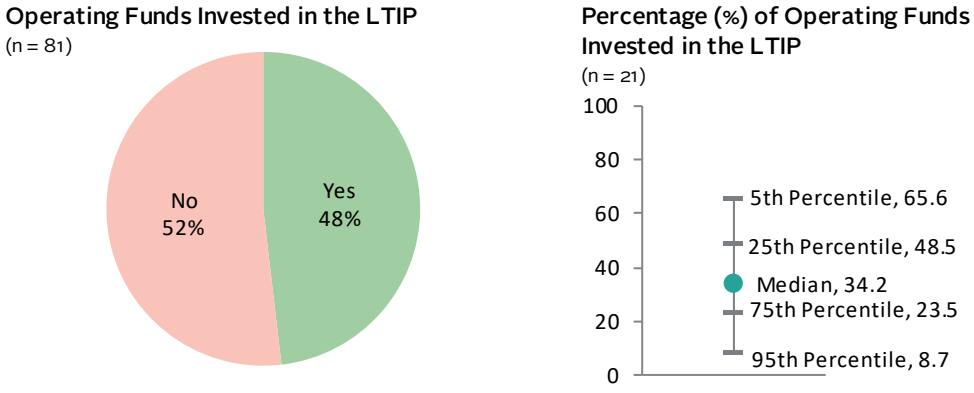
OPERATING FUNDS AND OTHER LIQUIDITY SOURCES. For many institutions, the LTIP is not the only investment pool or source of liquidity. Assessing liquidity sources outside of the LTIP can help to inform liquidity needs within the LTIP. Operating funds and lines of credit are the two most common sources of short-term liquidity for colleges and universities.

Nearly half of respondents (48%) that provided the composition of their LTIP invest a portion of their operating funds in the portfolio. The median percentage of operating funds invested in the LTIP was 34.2%, but this percentage varies considerably across respondents (Figure 56). The remaining 52% of respondents hold all operating reserves outside of the LTIP. Operating funds held outside of the LTIP tend to be the first source of liquidity when immediate funding is needed.[6]

6 For a more in-depth discussion on this topic, please see Tracy Abedon Filosa, "Disruption, Liquidity Sources, and the Role of the Endowment," Cambridge Associates LLC, September 2020.

FIGURE 56 OPERATING FUNDS

Fiscal Year-End 2022



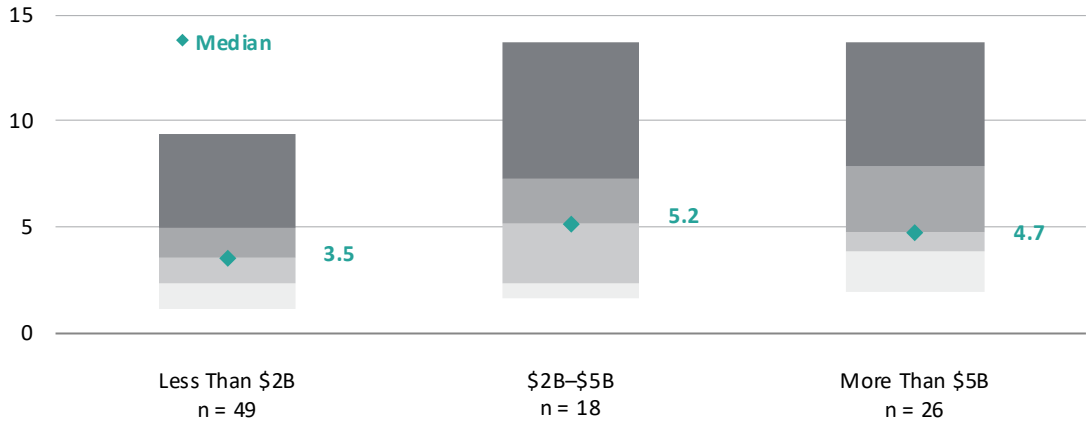
Source: College and university data as reported to Cambridge Associates LLC.

In addition to operating funds, many colleges and universities have access to extra liquidity through a line of credit. Of the 75 institutions that provided data, 12 had outstanding amounts drawn against their credit line as of fiscal year end. There are many enterprise and balance sheet factors that may determine the sizing of a line of credit. Among the respondents to this study, the size of credit lines varied considerably, ranging from a low of $4 million to more than $1.5 billion on the high end.

DEBT. Figure 57 shows the range of endowment-to-debt ratios for separate asset size groups. Endowments with assets between $2 billion and $5 billion had the highest median ratio (5.2 times). Several endowments with assets in excess of $2 billion reported levels in the double digits, as the 5th percentile was 13.7 times for each of the larger asset bands. The ratio is sensitive to shifts in endowment market value and debt levels. Nearly all endowments lost value in fiscal year 2022, while changes in debt levels varied by institution. The median change in outstanding debt year-over-year was -1.4%, which means that a majority of respondents saw a decline in their level of debt in 2022.

FIGURE 57 ENDOWMENT TO DEBT

As of June 30, 2022 • n = 93



Source: Endowment data as reported to Cambridge Associates LLC.

Note: For more information, see page 79 in the Appendix.

Section 6: Investment Office Staffing and Governance

INVESTMENT OFFICE STAFFING AND OUTSIDE RESOURCES

The primary mission of an investment office is to assume day-to-day responsibility for the endowment and other investment assets. This mission will be defined by the set of functions that internal investment office staff will carry out or oversee. Since both the investment philosophy and the demands on the office will vary among institutions, each office will have its own unique profile. Therefore, when evaluating the current structure or anticipated growth of an investment office, it is important to consider not only the size of the asset base, but also the portfolio complexity (whether handled by internal or external resources), the secondary demands on the staff (i.e., treasury functions), the use of outside consultants or advisors, and the level of involvement by boards and committees. Both the number of internal professional investment staff and the depth of specialization required to successfully manage the asset base will fluctuate based on these characteristics.

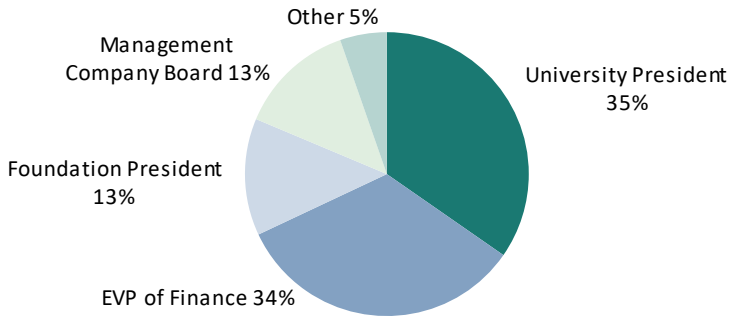
CHIEF INVESTMENT OFFICER. The presence of a dedicated Chief Investment Officer (CIO) correlates with asset size and is most common at larger endowments. A large percentage (95%) of the respondents with endowments greater than $1 billion have a full-time CIO, while 65% of respondents with assets between $500 million and $1 billon indicated they had a CIO in place. The percentage is drastically lower for endowments less than $500 million, where only 3% of respondents have an internal CIO.

Organizations with smaller asset sizes rely more heavily on outside advisors to oversee investment assets. In these cases, the chief financial officer might work closely with external investment advisors to develop an investment strategy and monitor investment managers. It is also becoming more commonplace for endowments of this size to outsource some or the entire portfolio to an OCIO.

Where there is a CIO, it is most common in private institutions for the position to report directly to the CEO or President of the university. Some large public universities have created legally separate management companies that are charged with managing the universities' investments. In these cases, the CIO (or CEO of the Management Company) will report directly to the Management Company Board. If the management of investments resides at a foundation that supports the university, it is most common for the CIO to report to the President of the Foundation (Figure 58).

FIGURE 58 CHIEF INVESTMENT OFFICER REPORTING LINES

Fiscal Year 2022 • n = 75

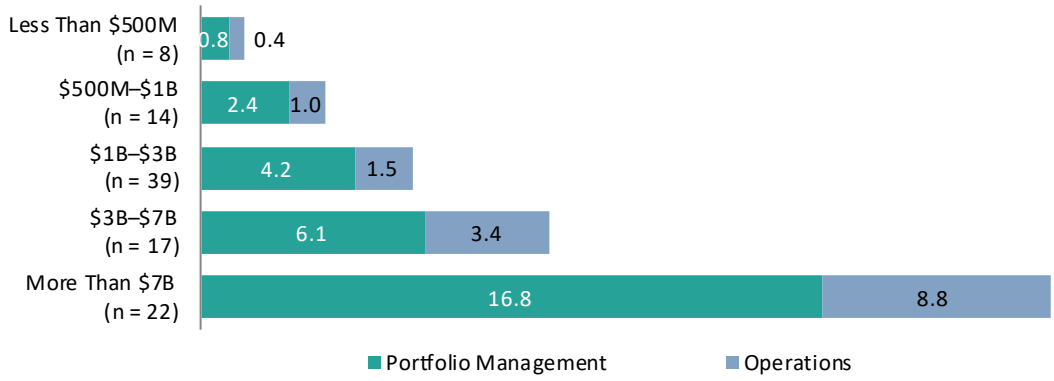


Source: College and university data as reported to Cambridge Associates LLC.

STAFFING LEVELS. Investment office personnel are typically divided into portfolio management and investment operations. Portfolio management staff are responsible for implementing the investment policy of the committee and can include: a CIO, risk officer(s), investment director(s), investment officer(s), portfolio manager(s), and analyst(s). Investment operations staff are responsible for the management of custodian and broker relationships, transaction processing, capital call management, endowment accounting, performance measurement, and in some cases, conducting operational due diligence on investment managers.

Our survey shows that investment office staffing typically correlates with asset size. This is perhaps not surprising as larger portfolios tend to invest with more fund managers and favor a more active investment approach, which can require more resources. Endowments that oversee more than $7 billion in assets employ a total of 25.6 full-time equivalent (FTE), on average (Figure 59). The average total FTE is split approximately two-thirds to investment management staff (16.8) and one-third (8.8) to operations staff. On the opposite side of the asset size spectrum, endowments less than $500 million have much smaller in-house investment resources (if any) and use outside professionals to manage or assist in managing the investment portfolio.

FIGURE 59 AVERAGE STAFFING LEVELS
Fiscal Year 2022 • Number of FTEs



Source: College and university data as reported to Cambridge Associates LLC.

Personnel consists of a mixture of senior-, mid-, and junior-level positions. Senior investment professionals typically carry the title of Managing Director, Investment Director, or VP and have more than ten years of professional experience. Mid-level professionals can hold the titles of Investment Officer or Associate and bring five to ten years of experience. Junior-level positions are usually recent graduates or those with a few years of experience. Junior positions usually carry the title of Investment Analyst or Associate. Figure 60 provides the average FTEs by asset size and position levels for investment management and operations positions.

FIGURE 60 AVERAGE INVESTMENT STAFF BY FUNCTION

Fiscal Year 2022 • Number of FTEs

	Investment Management			Investment Operations		
	Senior	Mid	Junior	Senior	Mid	Junior
More Than $7B	6.7	4.6	6.9	1.6	2.9	6.0
n	*21*	*14*	*19*	*14*	*20*	*19*
$3B–$7B	2.7	2.4	2.1	1.0	1.2	2.5
n	*15*	*7*	*13*	*10*	*15*	*12*
$1B–$3B	1.6	1.3	1.8	0.9	1.0	1.2
n	*36*	*12*	*27*	*12*	*25*	*20*
$500M–$1B	1.3	1.0	1.4	0.8	0.8	0.7
n	*10*	*3*	*5*	*5*	*7*	*7*

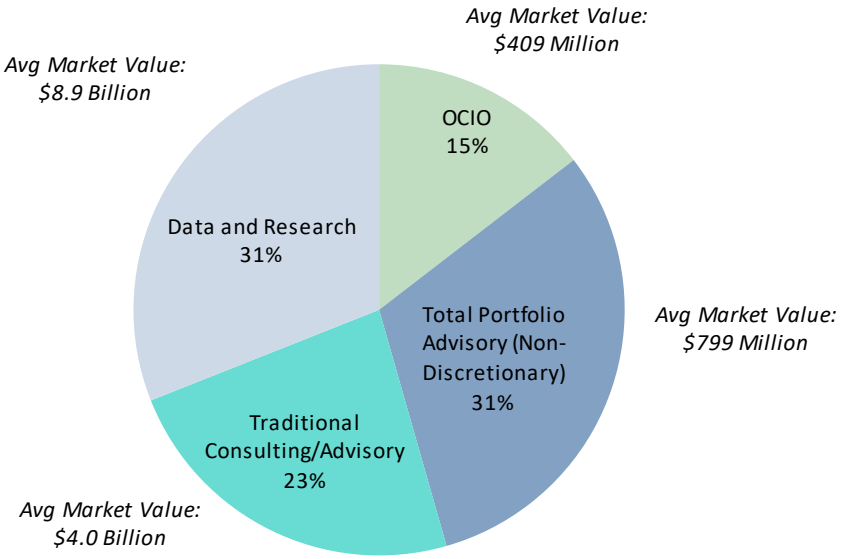
Source: College and university data as reported to Cambridge Associates LLC.

Notes: Office leadership positions (CFO/CIO), IT, and legal support are not included in the analysis. Only institutions with personnel at the specific staffing level are included in each category. Therefore, the sum of the personnel across each category will not equal the total investment office FTEs. The Less Than $500M cohort was not included due to insufficient observations.

RELIANCE ON OUTSIDE ADVISORS AND CONSULTANTS. Endowments engage external advisors and consultants in varying degrees and across a wide variety of functions. Based on survey responses and our understanding of how each survey participant engages with CA, Figure 61 broadly illustrates how the 158 participants in this study work with outside advisors or consultants. Endowments with assets less than $1 billion rely more heavily on external advisors to manage or help manage their investment portfolios, while larger endowments will seek outside support in the form of research, data, or asset class specialization.

FIGURE 61 USE OF EXTERNAL ADVISORS AND CONSULTANTS

Fiscal Year 2022 • n = 158



Sources: College and university data as reported to Cambridge Associates LLC and CA's service contract records.

Discretionary portfolio management, also known as OCIO, allows institutions to fully delegate portfolio management decision making to an outside firm. These firms are accountable for portfolio strategy, implementation, day-to-day management, and operations. Managing the portfolio within agreed-upon policy guidelines, the outsourced investment team makes manager selection, manager termination, tactical asset allocation, and portfolio rebalancing decisions. A relatively small proportion of the respondent group (15%) use CA under this management model.

Almost one-third (31%) of institutions in our study use advisors for non-discretionary portfolio management services for the total endowment. These institutions work with an outside team of investment professionals who provide day-to-day oversight of their portfolios, while retaining final decision making on portfolio investments. This model provides resources and expertise to contribute to portfolio management alongside an institution's staff.

Most larger endowments have built their own internal investment teams and are much less likely to use advisors for investment management services. Almost one-third (31%) of participants use outside support for research, manager, peer, and benchmarking data. The average market value of endowments using consultants in this fashion is $8.9 billion. The remaining 23% of survey participants use external resources for a range of consulting services, including asset allocation reviews, manager searches, alternative assets management, ESG/MRI consulting, and performance reporting. The average asset size for this group of endowments is $4.0 billion.

A range of services other than portfolio management is commonly used by institutions of different sizes. Based on survey responses, smaller endowments rely more heavily on external advisors for policy and asset allocation, performance reporting, and manager searches than the largest endowments. Reliance on research and data was more consistent across all asset sizes.

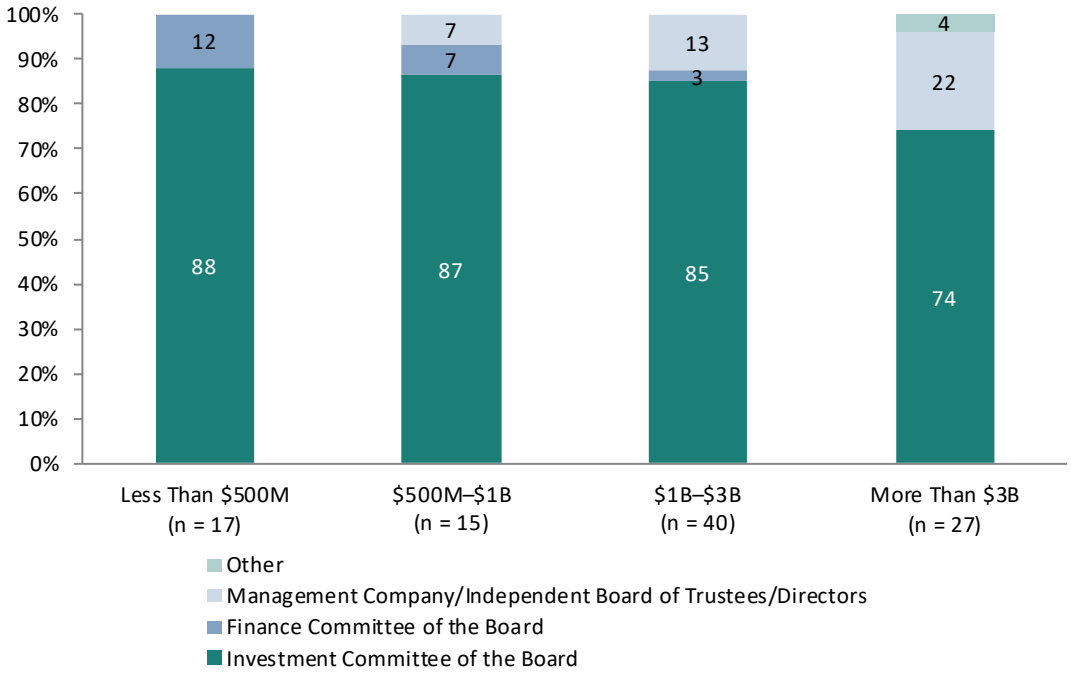
GOVERNANCE

Good governance is one key factor to a successful investment program. To create the conditions for good governance, endowments should assess whether they have in place the appropriate model for portfolio oversight and management, are upholding their fiduciary responsibilities, and are learning about peer best practices in committee structure, process, and policies.

GOVERNING BODY/OVERSIGHT COMMITTEE. Regardless of endowment size, an investment committee of the board most often has oversight over the investment office and/or outside advisors who manage the portfolio. In much smaller numbers, other governing bodies cited by respondents were finance committee of the board and management company/independent board of trustees/directors (Figure 62).

FIGURE 62 GOVERNING BODY OF OVERSIGHT COMMITTEE BY ORGANIZATION TYPE

Fiscal Year 2022 • Percent of Institutions (%)



Source: College and university data as reported to Cambridge Associates LLC.

Note: Other includes one institution who has a combined finance and investment committee.

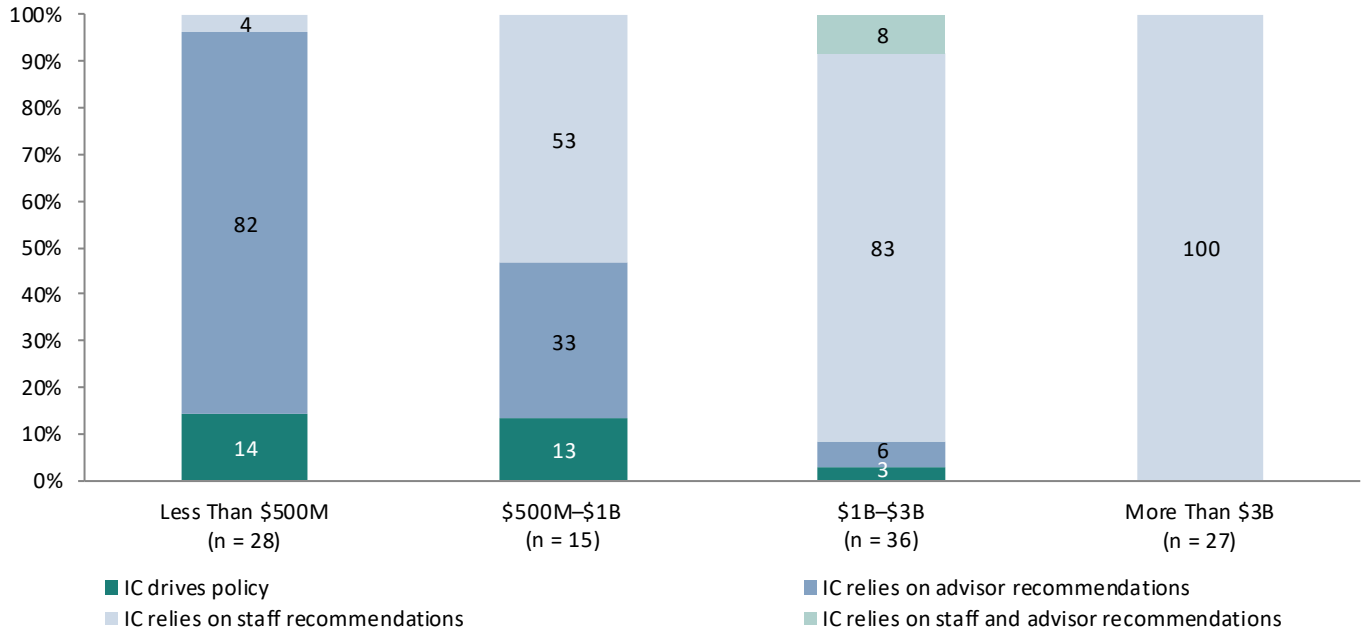
Some of the largest university endowments have established legally separate investment management companies, which have their own board of directors. In these cases, the management company's board typically has some overlap with that of the university.

DECISION-MAKING RESPONSIBILITY. To help quantify the dynamic between the governing body (hereafter referred to as simply investment committee) and those managing the endowment (internal investment office or outside advisor), we asked who possessed decision-making responsibility for four integral investment functions: asset allocation policy development, portfolio rebalancing, manager selection, and manager termination. The resulting data show certain trends in the balance of authority between investment committees, staff, and advisors.

There is a strong relationship between asset allocation policy development and size of the portfolio. For all participating endowments greater than $3 billion, asset allocation policy is developed by committees acting on staff recommendations (Figure 63). In contrast, just 4% of committees at endowments less than $500 million rely solely on staff recommendations. Among these smaller endowments, committees depend far more on the recommendations of outside advisors or drive the policy autonomously. When it comes to rebalancing, both the investment committee's role and the advisor's role in portfolio rebalancing are steadily diminished as endowment size increases. Among endowments less than $500 million, 75% rely on advisors to make rebalancing decisions and 21% have their investment committee control this function. For endowments greater than $500 million, total staff discretion is most common (Figure 64).

FIGURE 63 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: ASSET ALLOCATION POLICY DEVELOPMENT

Fiscal Year 2022 • Percent of Institutions (%)

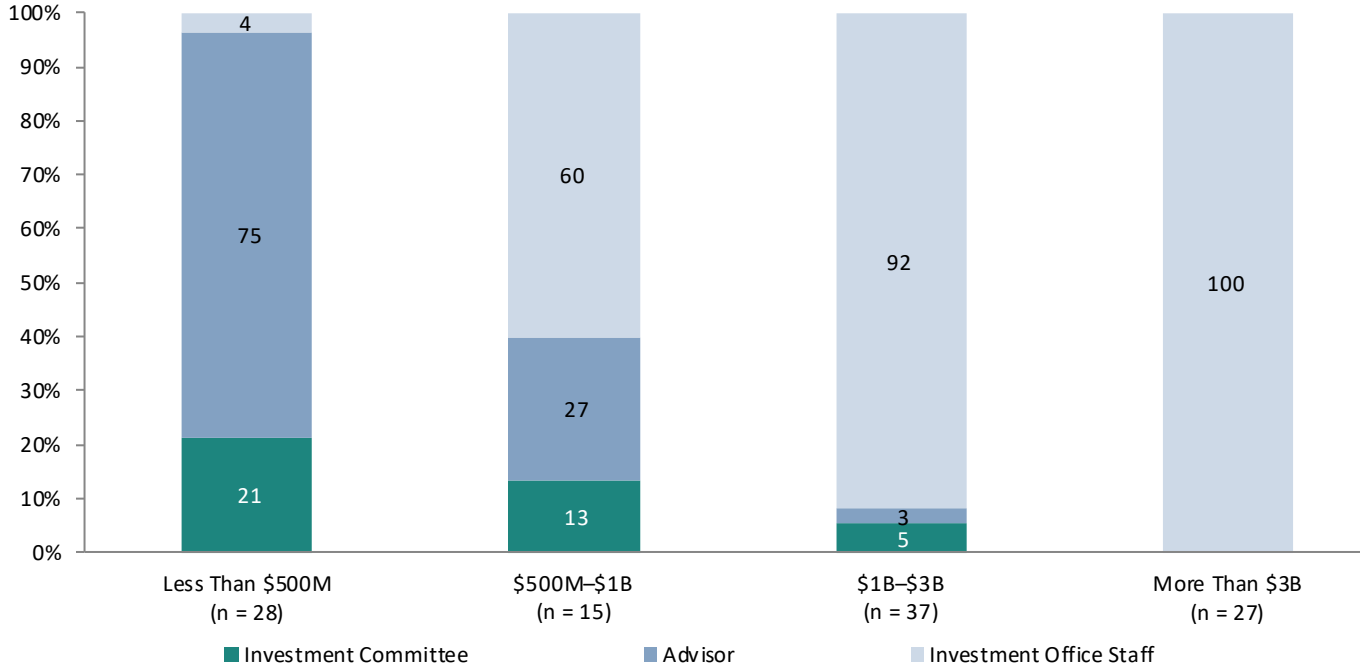


Source: College and university data as reported to Cambridge Associates LLC.

Note: Investment Committee (IC) is shorthand for governing body.

FIGURE 64 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: PORTFOLIO REBALANCING

Fiscal Year 2022 • Percent of Institutions (%)

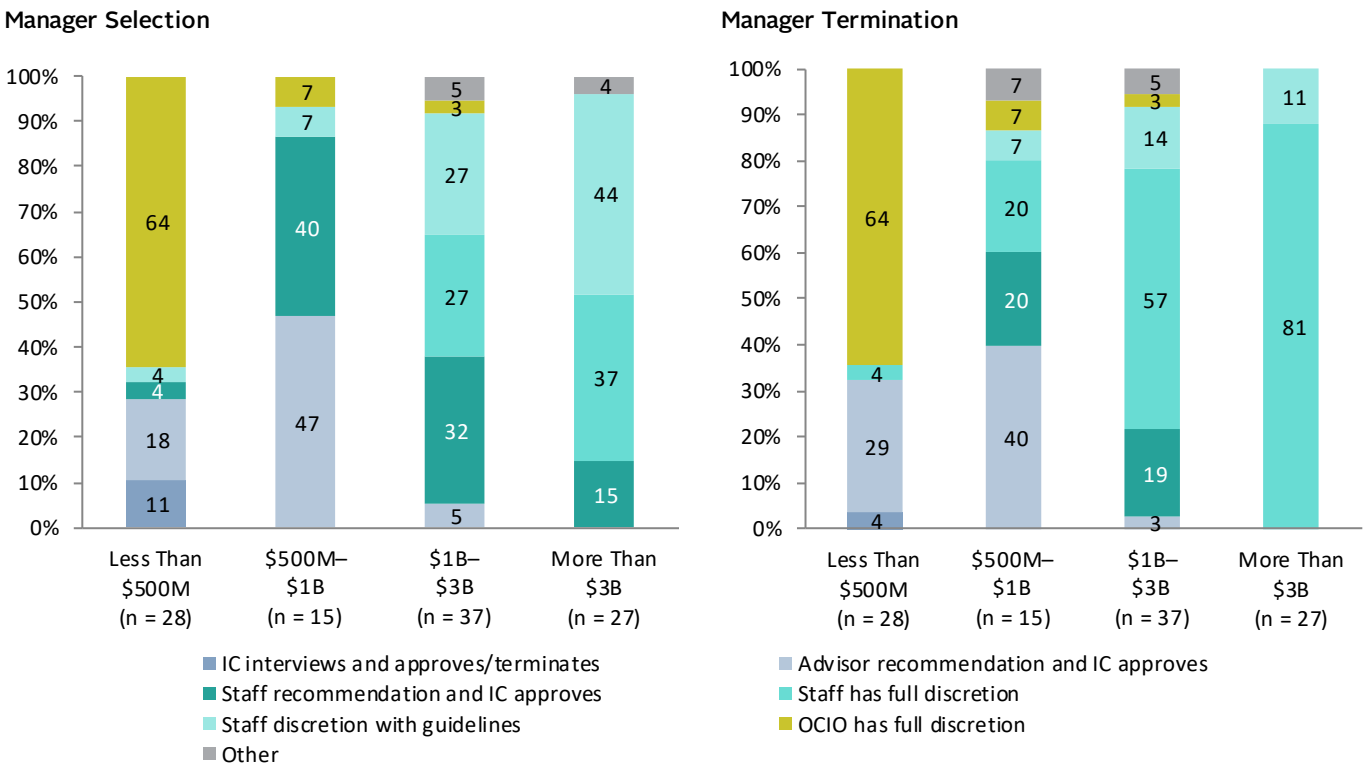


Source: College and university data as reported to Cambridge Associates LLC.

The process of manager selection and termination also involves committees, advisors, and staff, but with different degrees of discretion (Figure 65). Advisors play a significant role in both selection and termination of investment managers at endowments less than $500 million, with approximately two-thirds delegating full discretion to an OCIO to make hiring and firing decisions. Among the investment committees involved in manager selection, the predominant role is to approve managers, but not interview them. Staff recommendations are increasingly relied upon from $500 million to $1 billion, and staff discretion (with and without guidelines) accounts for most of the decision making at endowments greater than $1 billion.

FIGURE 65 DECISION-MAKING AND IMPLEMENTATION RESPONSIBILITY FOR KEY INVESTMENT FUNCTIONS: MANAGER SELECTION AND TERMINATION

Fiscal Year 2022 • Percent of Institutions (%)



Source: College and university data as reported to Cambridge Associates LLC.

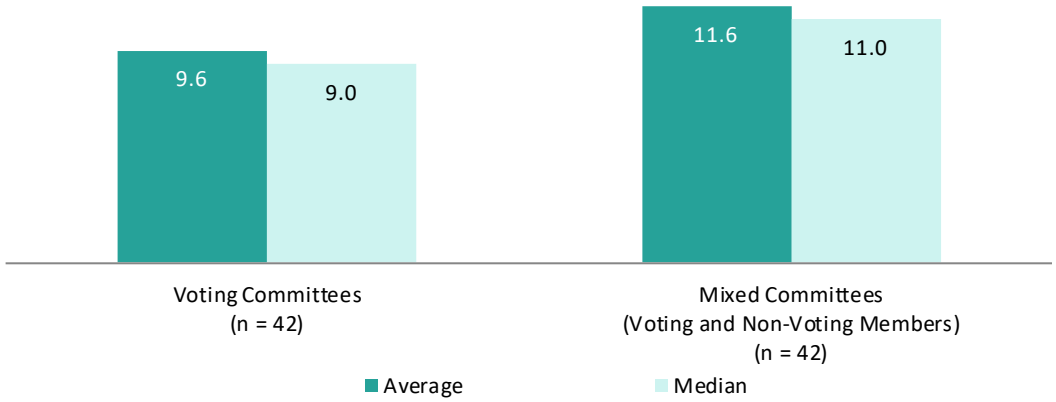
Notes: Investment Committee (IC) is shorthand for governing body. "Other" includes IC approval based on staff and advisor recommendations.

INVESTMENT COMMITTEE COMPOSITION. Two types of investment committees emerged from our survey data. We found that responding institutions were split evenly between those that have fully voting committees and those that have investment committees that include non-voting members. While mandatory voting encourages accountability, there can be good reasons to include non-voting members. Organizations should weigh the benefit of these advisory members against the prospects of an oversized committee.

The average size of voting committees is 9.6, while those that include non-voting members average 11.6 members (Figure 66). Investment committee members include trustees, non-trustees, and ex officio members. Examples of ex officio committee

members include the president of the college or chairman of the board or of another committee, whose investment committee membership is included in the official duties of the position.

FIGURE 66 PROFILE OF INVESTMENT COMMITTEE MEMBERS
Fiscal Year 2022 • Number of Voting Committee Members

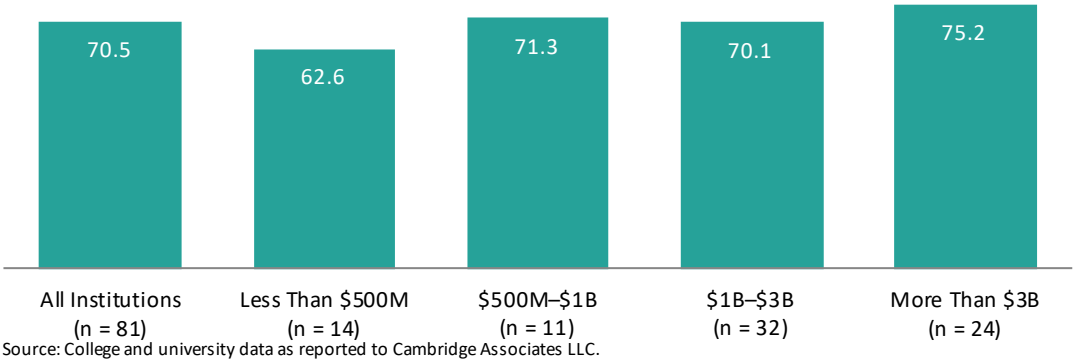


Source: College and university data as reported to Cambridge Associates LLC.
Note: Investment Committee is shorthand for governing body.

Investment committee members can bring a diverse set of experiences to assist in overseeing institutional investment assets. At least some committee members should have professional, institutional investment experience—not just experience managing their own money—and if the organization lacks sufficient trustees with such qualifications, many times the committee includes non-trustee members with investment expertise to fulfill this role.

On average, respondents indicated that 70% of their committee members have investment experience. This percentage tends to be greater as asset size increases. Organizations with assets less than $500 million reported an average of 63% of committee membership having professional investment experience. At endowments greater than $3 billion, the percentage of committee members that were investment professionals was 75% (Figure 67).

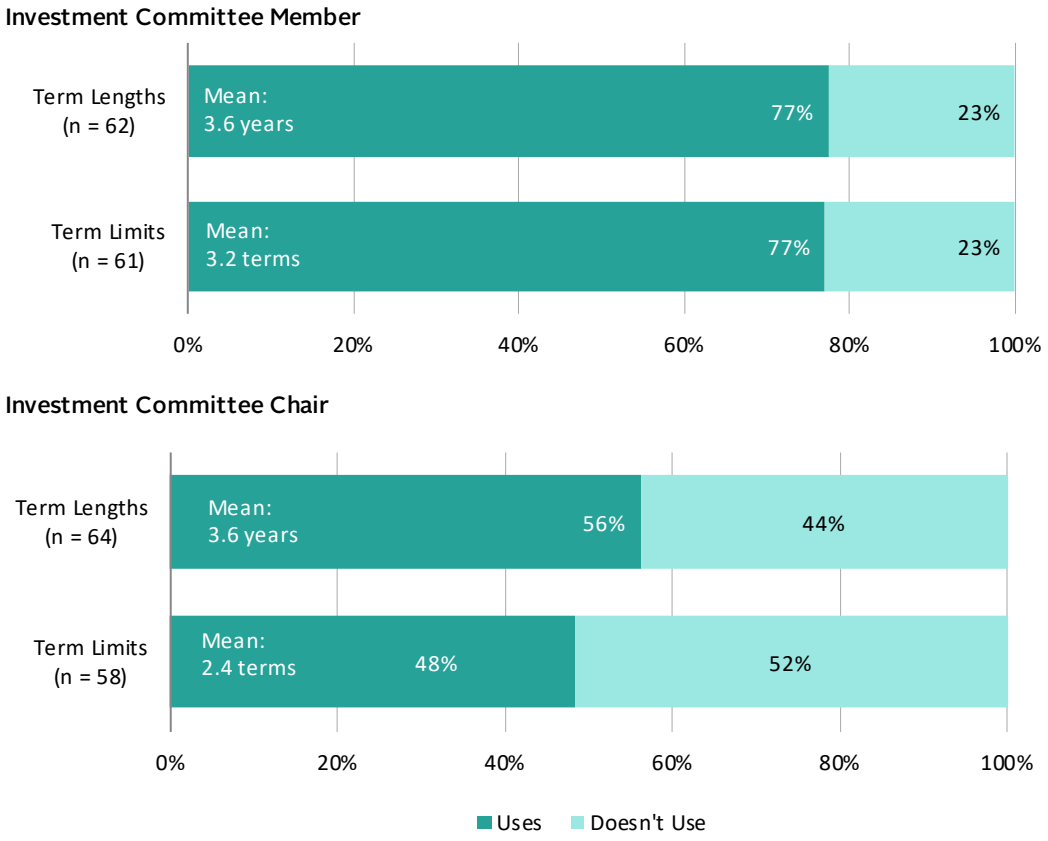
FIGURE 67 PERCENT OF INVESTMENT COMMITTEE MEMBERS WHO ARE INVESTMENT PROFESSIONALS
Fiscal Year 2022 • Percent of Institutions (%)



Source: College and university data as reported to Cambridge Associates LLC.

COMMITTEE TERM LENGTH AND LIMITS. Setting guidelines for terms can help manage member turnover and mitigate committee stagnation. The use of term lengths for investment committee members was cited by 77% of respondents, with the average term being 3.6 years (Figure 68). The same percentage of respondents (77%) use term limits for committee members and the average limit is 3.2 terms. The prevalence of these guidelines for investment committee chairs was lower, with term lengths and limits being used by 56% and 48% of respondents, respectively. The lack of policies around term limits and lengths at some endowments could suggest that these institutions value the stability of a long-standing committee or chair and view turnover as disruptive to long-term investment policy.

FIGURE 68 INVESTMENT COMMITTEE TERM LENGTHS AND LIMITS
As of June 30, 2022



Source: College and university data as reported to Cambridge Associates LLC.

INVESTMENT COMMITTEE MEETINGS. Our survey responses show that the majority of endowments (75%) hold quarterly meetings. Few institutions hold meetings on a more or less frequent schedule, but ad hoc conference calls are a frequently cited occurrence. Regular attendance of investment committee members is critical to proper oversight. Participants indicated that average attendance was strong, at 85%.

REIMBURSEMENT AND CONFLICT-OF-INTEREST POLICY. Only 24% of respondents provide committee members with expense reimbursement, which generally includes travel-related and other out-of-pocket expenses.

All participants have a conflict-of-interest policy for investment committee members. These policies require disclosure (33%), recusal (22%), or both disclosure and recusal (35%). Policies may differ by asset class, with institutions requiring disclosure for long-only equity conflicts and recusal for private equity conflicts, for example. Most institutions (88%) also have a conflict-of-interest policy in place for investment staff. 51% of policies require disclosure only, 23% require recusal, and 26% require disclosure and recusal.

Notes on the Data

The notation of *n* denotes the number of institutions included in each analysis.

Returns for periods greater than one-year are annualized.

The simple portfolio benchmark consisting of 70% MSCI ACWI Index/30% Bloomberg Aggregate Bond Index is calculated assuming rebalancing occurs on the final day of each quarter.

The MSCI indexes contained in this report are net of dividend taxes for global ex US securities.

Private indexes are pooled horizon IRRs, net of fees, expenses, and carried interest.

PROFILE OF RESPONDENTS

This report includes data for 158 colleges and universities. 20 are public institutions, 29 are foundations affiliated with public institutions, and 109 are private institutions. All participants provided investment pool return and asset allocation data as of June 30, 2022. The notation of *n* denotes the number of institutions included in each analysis.

The 158 participants in this study reported long-term investment portfolio (LTIP) assets as of June 30, 2022, totaling $638 billion. The mean LTIP size was $4.0 billion, and the median was $1.2 billion.

17 participants have an LTIP size less than $200 million, while 88 have an asset size greater than $1 billion. The remaining 53 participants have an LTIP size between $200 million and $1 billion. The participants with LTIP sizes greater than $1 billion controlled 96% of the aggregate LTIP assets.

CALCULATION OF THE SHARPE RATIO

The Sharpe ratio shows how much return above the risk-free rate (T-bills) the investor has earned per unit of risk (defined as standard deviation of returns). The higher the Sharpe ratio, the more the investor has been compensated for each unit of risk taken. The ratio is a measure of reward relative to total volatility. The formula is:

$$\frac{R_p - R_f}{S_p} = \text{Sharpe Ratio}$$

Where:

- R_p is the arithmetic average of composite quarterly returns,
- R_f is the arithmetic average of T-bill (risk-free) quarterly returns, and
- S_p is the quarterly standard deviation of composite quarterly returns.

MODIFIED PUBLIC MARKET EQUIVALENT (MPME) INDEXES

Under Cambridge Associates' mPME methodology, the public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund and mPME NAV is a function of mPME cash flows. The mPME analysis evaluates what return would have been earned had the dollars invested in private investments been invested in the public market instead. ■

Appendix: Investment Portfolio Returns

FISCAL YEAR 2022 TOTAL RETURN PERCENTILES

Trailing 1-Yr as of June 30, 2022 • Percent (%) • By Percentile Ranking

	All C&Us	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B
5th %ile	1.6	-7.5	-1.6	-1.3	2.8	2.2
25th %ile	-3.3	-10.0	-6.3	-3.1	-2.8	-1.3
Median	-6.6	-12.0	-8.2	-5.7	-5.7	-4.4
75th %ile	-10.0	-14.3	-11.0	-7.8	-7.5	-7.7
95th %ile	-13.7	-17.2	-13.8	-11.2	-11.6	-11.7
Mean	-6.4	-11.9	-8.3	-5.9	-4.9	-4.6
n	*158*	*17*	*33*	*20*	*47*	*41*

Source: College and university data as reported to Cambridge Associates LLC.

EXAMPLE OF 1-YR ATTRIBUTION ANALYSIS: ALL C&U MEAN

As of June 30, 2022 • Percent (%) • n = 156

	Breakdown of Return From Asset Allocation			
Asset Class	Beginning Year Mean Asset Allocation	Asset Class Benchmark Return	Contribution to Asset Class Return	Index
Non-Venture Private Equity	10.1	6.6	1.0	CA US Private Equity
Private Oil & Gas / Natural Resources	2.7	27.1	0.8	CA Natural Resources
Private Real Estate	2.9	19.6	0.6	CA Real Estate
Venture Capital	10.9	2.5	0.5	CA US Venture Capital
Other Private Investments	1.9	5.4	0.1	CA US PE/VC
Public Energy / Natural Resources	0.7	18.3	0.1	MSCI World Nat Res (N)
Distressed-Private Equity Structure	0.8	13.3	0.1	CA Distressed Securities
Private Credit	1.1	4.9	0.1	CA Private Credit
Commodities	0.3	24.3	0.1	Bloomberg Commodity
Cash & Equivalents	3.3	0.2	0.0	91-Day T-Bill
Global ex US Bonds	0.0	-21.9	0.0	FTSE Non-US$ WGBI
Inflation-Linked Bonds	0.4	-5.1	0.0	BBG Barc US TIPS
Global Bonds	0.2	-16.8	0.0	FTSE WGBI
High Yield Bonds	0.2	-12.8	0.0	BBG High Yield
Distressed-Hedge Fund Structure	1.1	-2.8	0.0	HFRI ED: Dist/Rest
Public Real Estate	0.4	-12.7	-0.1	FTSE NAREIT Composite
Other	0.9	-13.8	-0.1	70% Global Eq / 30% Bond
Absolute Return (ex Distressed)	7.8	-3.3	-0.3	HFRI FOF Diversified
US Bonds	6.6	-10.3	-0.7	BBG Agg Bond
Long/Short Hedge Funds	6.6	-12.0	-0.8	HFRI Equity Hedge
Global Equity	7.7	-15.5	-1.2	MSCI ACWI
Global ex US Equity-Emerging Mkts	5.7	-25.3	-1.4	MSCI Emg Mkts (N)
Global ex US Equity-Developed Mkts	9.5	-17.8	-1.7	MSCI EAFE (N)
US Equity	17.9	-13.9	-2.5	Russell 3000
Return From Asset Allocation (Sum of Contributions)			*-5.4*	
+/- Return From Other Factors			*-1.0*	
Mean Total Portfolio Return			**-6.5**	

Sources: College and university data as reported to Cambridge Associates LLC. Index data provided by Bloomberg Index Services Limited, BofA Merrill Lynch, Cambridge Associates LLC, Frank Russell Company, FTSE Fixed Income LLC, FTSE International Limited, Hedge Fund Research, Inc., J.P. Morgan Securities, Inc., MSCI Inc., National Association of Real Estate Investment Trusts, and the National Council of Real Estate Investment Fiduciaries. MSCI data provided "as is" without any express or implied warranties.

Note: To be consistent with the methodology in which private investment returns are incorporated into the total portfolio composite calculation, private investment benchmark returns are linked quarterly horizon returns.

DISPERSION OF PARTICIPANTS' 1-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 1-Yr as of June 30, 2022 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	28.1	25.7	39.6	58.4	34.6	39.9	45.7	54.7
25th %ile	15.8	16.4	16.4	24.8	13.6	29.9	25.4	39.5
Median	9.4	9.1	4.9	15.2	7.2	25.1	18.1	30.7
75th %ile	1.8	3.5	-3.9	3.7	3.2	18.2	10.7	22.8
95th %ile	-9.5	-7.7	-20.1	-11.4	-5.5	4.2	-1.2	6.2
Mean	8.9	9.9	6.1	16.6	9.6	23.3	18.5	30.1
n	*119*	*113*	*111*	*64*	*74*	*105*	*109*	*108*
Median by Asset Size								
Less Than $200M	13.2	11.1	16.3	24.2	12.9	19.7	8.3	20.8
n	*13*	*13*	*11*	*4*	*6*	*11*	*8*	*9*
$200M–$500M	12.2	10.3	5.1	23.9	7.4	22.9	12.7	27.1
n	*33*	*33*	*32*	*18*	*24*	*31*	*27*	*27*
$500M–$1B	12.2	10.8	6.1	14.4	8.9	26.4	19.5	35.2
n	*15*	*14*	*14*	*12*	*12*	*15*	*15*	*14*
$1B–$3B	9.3	7.4	3.6	13.1	5.4	28.2	19.6	35.2
n	*34*	*30*	*30*	*18*	*21*	*30*	*33*	*33*
More Than $3B	2.0	10.0	3.6	3.9	6.2	26.9	21.2	31.9
n	*24*	*23*	*24*	*12*	*11*	*18*	*26*	*25*
Median by Total Performance Quartile								
Top Quartile	14.6	12.9	7.7	16.1	6.8	27.4	22.3	37.7
n	*29*	*23*	*23*	*14*	*18*	*20*	*27*	*27*
2nd Quartile	11.0	8.9	8.2	11.3	10.1	26.4	20.5	31.2
n	*27*	*28*	*28*	*18*	*20*	*27*	*27*	*27*
3rd Quartile	7.1	8.5	0.1	14.5	4.5	26.6	17.8	29.0
n	*31*	*30*	*31*	*16*	*20*	*28*	*29*	*29*
Bottom Quartile	5.9	8.6	1.2	20.3	8.5	13.4	8.0	20.8
n	*32*	*32*	*29*	*16*	*16*	*30*	*26*	*25*

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Institutions are assigned to performance quartiles based on their fiscal year 2022 total portfolio return. Private investment return statistics are reported as horizon IRRs.

PARTICIPANTS' 1-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 1-Yr as of June 30, 2022 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commod & Natural Resources	Public Real Estate
All C&Us									
5th %ile	-13.3	-8.8	-8.3	-10.8	-13.1	-1.3	3.6	24.4	19.8
25th %ile	-16.3	-16.3	-12.4	-16.1	-18.1	-4.9	-3.2	14.8	-5.4
Median	-18.2	-22.0	-14.7	-18.9	-22.6	-7.6	-8.5	10.6	-8.0
75th %ile	-21.7	-28.4	-18.5	-21.5	-26.4	-9.5	-12.2	4.7	-11.4
95th %ile	-28.2	-40.2	-30.9	-27.3	-32.5	-12.3	-21.4	-15.2	-15.3
Mean	-19.3	-22.5	-16.6	-19.1	-22.8	-7.1	-8.6	9.7	-5.6
n	*124*	*78*	*116*	*109*	*112*	*123*	*127*	*42*	*31*
Median by Asset Size									
Less Than $200M	-17.0	-18.6	-15.4	-19.0	-22.7	-9.5	-11.3	5.0	-8.0
n	*17*	*10*	*16*	*15*	*15*	*17*	*15*	*8*	*4*
$200M–$500M	-17.1	-16.9	-14.2	-21.4	-20.4	-7.9	-7.6	9.8	-8.0
n	*31*	*25*	*32*	*30*	*31*	*30*	*30*	*11*	*5*
$500M–$1B	-16.5	-23.0	-12.7	-18.9	-22.5	-7.8	-8.0	10.4	-11.4
n	*15*	*8*	*15*	*15*	*15*	*17*	*17*	*5*	*8*
$1B–$3B	-19.9	-23.4	-16.7	-18.2	-23.3	-6.7	-8.6	11.7	-6.5
n	*38*	*23*	*32*	*29*	*30*	*35*	*40*	*7*	*7*
More Than $3B	-22.6	-30.1	-17.9	-17.4	-25.7	-5.9	-8.5	15.5	-5.7
n	*23*	*12*	*21*	*20*	*21*	*24*	*25*	*11*	*7*
Median by Total Performance Quartile									
Top Quartile	-18.3	-16.4	-15.3	-17.8	-24.1	-6.2	-2.8	14.2	-6.1
n	*28*	*13*	*24*	*23*	*22*	*29*	*31*	*10*	*9*
2nd Quartile	-18.4	-23.3	-13.2	-18.9	-24.2	-7.8	-9.4	13.9	-7.1
n	*27*	*19*	*26*	*24*	*26*	*25*	*28*	*12*	*7*
3rd Quartile	-17.2	-17.2	-14.0	-18.5	-21.5	-7.8	-9.3	9.0	-9.0
n	*33*	*22*	*30*	*29*	*31*	*34*	*34*	*9*	*8*
Bottom Quartile	-18.5	-28.7	-16.0	-20.5	-21.6	-8.2	-11.7	2.2	-8.0
n	*36*	*24*	*36*	*33*	*33*	*35*	*34*	*11*	*7*

Source: College and university data as reported to Cambridge Associates LLC.

Note: Institutions are assigned to performance quartiles based on their fiscal year 2022 total portfolio return.

TOTAL RETURNS SUMMARY: TRAILING 3-, 5-, 10-, AND 20-YR

Years Ended June 30, 2022 • Percent (%)

	Nominal AACRs			
	3-Yr	5-Yr	10-Yr	20-Yr
All C&Us				
5th %ile	15.2	13.0	11.4	10.3
25th %ile	11.5	10.2	9.3	8.6
Median	9.4	8.6	8.4	7.6
75th %ile	7.5	7.0	7.3	6.8
95th %ile	5.2	5.5	6.3	6.0
Mean	9.6	8.8	8.5	7.8
n	*155*	*154*	*148*	*127*
Less Than $200M				
5th %ile	7.7	7.1	7.8	7.4
25th %ile	7.1	6.4	7.2	6.8
Median	5.5	5.7	6.7	6.3
75th %ile	4.2	5.0	6.3	6.1
95th %ile	2.5	4.2	5.8	5.8
Mean	5.4	5.7	6.8	6.4
n	*16*	*16*	*15*	*9*
$200M–$500M				
5th %ile	10.4	9.5	8.8	8.4
25th %ile	9.6	8.5	8.1	7.5
Median	8.1	7.8	7.3	6.9
75th %ile	7.1	6.6	7.0	6.5
95th %ile	6.0	5.8	6.2	6.0
Mean	8.2	7.7	7.5	7.0
n	*33*	*33*	*32*	*25*
$500M–$1B				
5th %ile	10.9	9.3	8.7	8.0
25th %ile	9.7	8.8	8.4	7.5
Median	8.5	7.7	7.9	6.9
75th %ile	7.4	6.8	7.3	6.5
95th %ile	6.5	6.4	6.6	6.3
Mean	8.6	7.8	7.9	7.0
n	*20*	*20*	*19*	*16*
$1B–$3B				
5th %ile	15.2	13.0	11.2	9.4
25th %ile	12.3	10.7	9.6	8.3
Median	9.9	9.4	8.8	7.6
75th %ile	8.8	8.3	8.0	7.2
95th %ile	6.8	6.5	7.4	6.5
Mean	10.5	9.5	8.9	7.8
n	*45*	*44*	*41*	*37*
More Than $3B				
5th %ile	16.8	14.1	12.2	11.0
25th %ile	14.4	12.0	11.0	9.9
Median	12.3	10.7	9.5	8.9
75th %ile	9.6	8.9	8.9	7.9
95th %ile	6.6	6.8	7.6	7.0
Mean	12.0	10.6	9.8	8.9
n	*41*	*41*	*41*	*40*

Source: College and university data as reported to Cambridge Associates LLC.

DISPERSION OF PARTICIPANTS' 3-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 3-Yr as of June 30, 2022 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	37.3	36.4	49.2	26.7	21.6	19.4	26.6	15.9
25th %ile	31.9	30.1	37.6	16.9	14.4	12.8	16.1	11.0
Median	28.7	25.5	33.2	12.0	10.1	9.3	12.6	7.7
75th %ile	24.7	20.7	27.0	7.5	6.9	6.7	8.0	4.4
95th %ile	19.0	15.6	17.3	-4.5	0.2	-3.5	-10.6	-2.1
Mean	28.4	25.6	32.8	11.5	10.1	8.9	11.0	7.9
n	*117*	*112*	*108*	*57*	*68*	*103*	*109*	*107*
Median by Asset Size								
Less Than $200M	26.7	20.2	34.7	15.3	11.7	5.8	8.6	6.2
n	*12*	*12*	*10*	*3*	*4*	*11*	*8*	*9*
$200M–$500M	29.1	26.8	31.5	14.9	12.6	8.2	8.1	6.7
n	*33*	*33*	*30*	*13*	*22*	*30*	*27*	*26*
$500M–$1B	28.4	26.3	31.0	9.4	12.0	11.9	14.1	9.7
n	*15*	*14*	*14*	*12*	*12*	*15*	*15*	*14*
$1B–$3B	28.0	26.0	33.1	13.5	7.8	9.9	13.2	8.3
n	*33*	*30*	*30*	*17*	*20*	*29*	*33*	*33*
More Than $3B	29.2	23.9	34.3	8.8	9.1	11.3	13.8	9.0
n	*24*	*23*	*24*	*12*	*10*	*18*	*26*	*25*

Source: College and university data as reported to Cambridge Associates LLC.

Note: Private investment return statistics are reported as horizon IRRs.

DISPERSION OF PARTICIPANTS' 5-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 5-Yr as of June 30, 2022 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	31.2	30.9	40.5	20.8	17.3	14.0	17.8	13.1
25th %ile	27.3	25.9	31.1	14.1	12.8	10.2	13.7	8.8
Median	24.7	22.6	28.7	9.8	9.7	8.1	11.5	5.6
75th %ile	21.1	18.1	24.9	5.1	6.1	5.1	7.2	3.2
95th %ile	16.6	13.2	13.7	-2.1	3.0	-3.1	-8.7	-2.9
Mean	24.3	22.0	27.9	9.4	12.3	7.2	9.5	5.7
n	*116*	*111*	*106*	*52*	*58*	*101*	*105*	*106*
Median by Asset Size								
Less Than $200M	21.2	17.9	27.9	10.7	10.6	6.5	7.9	5.6
n	*12*	*12*	*9*	*3*	*3*	*11*	*8*	*9*
$200M–$500M	25.4	23.5	28.2	10.6	11.5	6.4	7.1	5.4
n	*32*	*32*	*29*	*9*	*16*	*28*	*23*	*25*
$500M–$1B	24.2	23.2	26.9	6.9	11.4	9.8	13.4	4.4
n	*15*	*14*	*14*	*11*	*12*	*15*	*15*	*14*
$1B–$3B	24.3	22.9	28.7	10.1	7.7	7.8	11.9	6.6
n	*33*	*30*	*30*	*17*	*19*	*29*	*33*	*33*
More Than $3B	25.4	21.8	30.7	8.3	8.1	9.3	11.7	6.8
n	*24*	*23*	*24*	*12*	*8*	*18*	*26*	*25*

Source: College and university data as reported to Cambridge Associates LLC.

Note: Private investment return statistics are reported as horizon IRRs.

DISPERSION OF PARTICIPANTS' 10-YR ASSET CLASS IRRs: PRIVATE INVESTMENTS

Trailing 10-Yr as of June 30, 2022 • Percent (%)

	Total Private Equity	Non-Venture Private Equity	Venture Capital	Private Distressed Securities	Private Credit	Total Private Real Assets	Private Real Estate	Private Natural Resources
All C&Us								
5th %ile	23.8	23.4	30.9	14.6	28.1	13.4	16.9	8.5
25th %ile	21.1	20.2	25.0	12.4	11.8	9.5	14.2	6.1
Median	18.9	17.3	21.1	10.2	10.0	6.8	12.1	3.7
75th %ile	16.7	15.4	18.4	7.5	8.8	5.0	9.1	1.4
95th %ile	13.1	11.4	11.5	5.6	5.0	0.4	3.7	-2.5
Mean	18.8	17.4	21.4	10.3	12.4	7.1	11.1	3.6
n	*109*	*105*	*95*	*40*	*37*	*96*	*95*	*93*
Median by Asset Size								
Less Than $200M	16.7	14.5	18.9	12.4	3.5	6.8	10.0	1.9
n	*9*	*9*	*7*	*1*	*1*	*10*	*7*	*6*
$200M–$500M	18.6	18.3	20.1	11.6	10.3	6.5	9.5	3.3
n	*30*	*30*	*22*	*4*	*6*	*25*	*19*	*20*
$500M–$1B	19.2	18.2	22.1	10.4	10.9	7.6	12.8	2.8
n	*15*	*14*	*13*	*8*	*8*	*14*	*13*	*13*
$1B–$3B	18.7	17.6	21.5	8.3	10.6	6.9	12.4	4.0
n	*33*	*30*	*30*	*15*	*15*	*29*	*32*	*31*
More Than $3B	20.4	16.7	23.7	9.5	9.1	8.5	11.0	4.9
n	*22*	*22*	*23*	*12*	*7*	*18*	*24*	*23*
Median by Total Performance Quartile								
Top Quartile	21.1	18.1	25.6	9.6	9.1	8.6	12.4	4.7
n	*22*	*25*	*25*	*10*	*9*	*19*	*24*	*22*
2nd Quartile	19.8	18.2	21.1	10.9	11.1	6.9	12.8	3.9
n	*27*	*26*	*25*	*15*	*12*	*25*	*25*	*23*
3rd Quartile	19.0	18.8	19.7	8.5	10.9	6.8	10.8	3.0
n	*26*	*23*	*20*	*10*	*10*	*25*	*24*	*26*
Bottom Quartile	17.0	15.5	18.9	7.7	9.4	6.9	9.5	1.5
n	*28*	*27*	*21*	*3*	*4*	*23*	*18*	*17*

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Institutions are assigned to performance quartiles based on their trailing 10-year total portfolio return. Private investment return statistics are reported as horizon IRRs.

PARTICIPANTS' 3-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 3-Yr as of June 30, 2022 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commod & Natural Resources	Public Real Estate
All C&Us									
5th %ile	7.7	8.0	12.1	5.8	7.2	2.4	8.6	21.9	13.9
25th %ile	6.2	5.9	10.1	3.4	3.8	0.5	6.1	10.3	4.8
Median	5.3	3.9	9.0	2.2	1.9	-0.1	4.3	7.0	2.5
75th %ile	4.4	1.7	7.3	1.2	0.2	-0.7	2.5	3.9	-0.1
95th %ile	2.1	-2.3	3.2	-1.9	-3.1	-2.4	-2.1	-2.7	-1.1
Mean	5.2	3.6	8.5	2.2	1.8	0.0	3.9	7.7	3.8
n	*120*	*69*	*113*	*106*	*108*	*118*	*124*	*41*	*25*
Median by Asset Size									
Less Than $200M	5.3	2.6	8.0	2.1	1.2	-0.2	3.7	6.5	4.8
n	*15*	*7*	*15*	*14*	*14*	*15*	*13*	*8*	*4*
$200M–$500M	6.1	4.5	9.3	1.9	1.6	-0.1	4.8	4.7	5.8
n	*31*	*21*	*32*	*30*	*31*	*30*	*30*	*11*	*2*
$500M–$1B	5.7	5.7	9.8	2.5	1.4	-0.3	3.7	4.6	-0.4
n	*15*	*6*	*14*	*14*	*14*	*17*	*17*	*5*	*7*
$1B–$3B	4.8	3.8	8.7	1.9	2.0	-0.1	4.1	6.5	2.5
n	*36*	*23*	*31*	*28*	*28*	*32*	*39*	*6*	*6*
More Than $3B	4.8	2.4	7.7	2.6	3.6	0.2	5.2	13.1	2.6
n	*23*	*12*	*21*	*20*	*21*	*24*	*25*	*11*	*6*

Source: College and university data as reported to Cambridge Associates LLC.

PARTICIPANTS' 5-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 5-Yr as of June 30, 2022 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commod & Natural Resources	Public Real Estate
All C&Us									
5th %ile	8.3	8.3	12.3	5.4	6.3	2.8	8.0	13.9	14.0
25th %ile	6.7	6.6	10.9	3.9	3.7	1.7	5.6	7.3	6.3
Median	6.1	5.2	9.7	2.6	2.8	1.1	4.2	3.5	4.1
75th %ile	5.3	4.0	8.7	1.6	1.4	0.8	3.2	1.2	2.4
95th %ile	4.0	2.2	5.3	-0.2	-0.7	0.0	1.0	-4.9	2.0
Mean	6.1	5.3	9.6	2.7	2.6	1.3	4.2	4.7	5.8
n	*119*	*59*	*112*	*104*	*104*	*114*	*123*	*38*	*18*
Median by Asset Size									
Less Than $200M	5.8	4.4	9.1	2.8	2.2	1.1	3.8	4.5	4.1
n	*15*	*5*	*15*	*14*	*13*	*15*	*13*	*6*	*2*
$200M–$500M	6.5	5.3	10.3	2.4	2.1	1.1	4.2	2.4	6.4
n	*30*	*16*	*31*	*29*	*30*	*28*	*29*	*11*	*1*
$500M–$1B	6.2	5.7	10.6	2.6	1.9	1.0	3.9	3.3	2.5
n	*15*	*6*	*14*	*14*	*14*	*16*	*17*	*5*	*6*
$1B–$3B	6.0	5.2	9.7	2.5	3.1	1.0	4.0	1.5	9.0
n	*36*	*21*	*31*	*27*	*26*	*31*	*39*	*6*	*4*
More Than $3B	5.8	4.5	8.6	3.0	3.2	1.4	5.3	7.8	2.8
n	*23*	*11*	*21*	*20*	*21*	*24*	*25*	*10*	*5*

Source: College and university data as reported to Cambridge Associates LLC.

PARTICIPANTS' 10-YR ASSET CLASS RETURNS: MARKETABLE INVESTMENTS

Trailing 10-Yr as of June 30, 2022 • Percent (%)

	Total Public Equity	Global Equity Managers	US Equity	Dev Mkts ex US Equity	Emg Mkts Equity	Bonds	Hedge Funds	Commod & Natural Resources	Public Real Estate
All C&Us									
5th %ile	10.0	11.5	14.2	8.8	7.5	3.1	7.9	6.6	19.0
25th %ile	9.2	9.6	13.0	7.1	4.7	2.2	5.9	1.8	10.1
Median	8.6	8.7	12.0	6.5	3.7	1.6	5.0	-0.1	6.7
75th %ile	8.0	8.1	11.1	5.9	2.5	1.3	4.1	-2.1	5.9
95th %ile	7.1	6.8	9.2	4.7	1.4	0.6	2.8	-4.1	4.1
Mean	8.6	8.9	11.9	6.5	3.9	1.8	5.1	0.3	9.0
n	*113*	*38*	*104*	*94*	*96*	*104*	*113*	*31*	*11*
Median by Asset Size									
Less Than $200M	8.2	8.2	11.2	6.1	2.6	1.7	4.0	0.1	4.0
n	*14*	*3*	*14*	*12*	*10*	*12*	*10*	*6*	*1*
$200M–$500M	9.0	8.7	12.4	6.2	3.4	1.5	4.7	-0.8	7.3
n	*29*	*10*	*29*	*27*	*30*	*27*	*28*	*9*	*1*
$500M–$1B	8.7	8.5	13.1	6.5	2.7	1.5	4.2	-0.3	6.7
n	*15*	*2*	*14*	*14*	*13*	*14*	*15*	*5*	*3*
$1B–$3B	8.5	9.0	12.3	6.8	3.9	1.5	5.3	-1.4	9.9
n	*34*	*16*	*29*	*24*	*24*	*31*	*38*	*5*	*4*
More Than $3B	8.5	8.4	11.3	6.9	4.4	1.9	5.7	3.5	9.3
n	*21*	*7*	*18*	*17*	*19*	*20*	*22*	*6*	*2*
Median by Total Performance Quartile									
Top Quartile	8.7	8.7	11.9	7.0	4.8	1.7	5.5	0.3	9.5
n	*21*	*11*	*23*	*19*	*22*	*21*	*26*	*6*	*2*
2nd Quartile	8.7	9.3	12.9	6.6	4.1	1.6	5.2	0.8	7.3
n	*27*	*11*	*25*	*24*	*23*	*25*	*28*	*8*	*5*
3rd Quartile	8.7	8.9	12.5	6.5	3.1	1.7	4.4	0.1	6.6
n	*28*	*7*	*23*	*22*	*22*	*26*	*29*	*8*	*1*
Bottom Quartile	8.3	8.2	11.5	6.0	2.8	1.7	4.6	-1.4	5.4
n	*31*	*7*	*30*	*28*	*27*	*28*	*26*	*9*	*2*

Source: College and university data as reported to Cambridge Associates LLC.

Note: Institutions are assigned to performance quartiles based on their trailing 10-year total portfolio return.

REAL RETURNS AFTER SPENDING: TRAILING 3-, 5-, 10-, AND 20-Yr

Years Ended June 30, 2022 • Percent (%) • By Percentile Ranking

	3-Yr	5-Yr	10-Yr	20-Yr
All C&Us				
5th %ile	6.2	5.1	4.4	3.5
25th %ile	3.2	2.7	3.0	1.6
Median	0.6	0.8	1.6	1.0
75th %ile	-0.8	0.0	0.6	0.1
95th %ile	-2.9	-2.0	-0.5	-1.1
Mean	1.1	1.2	1.8	1.0
n	*93*	*82*	*74*	*66*

Source: College and university data as reported to Cambridge Associates LLC.

Appendix: Portfolio Asset Allocation

SUMMARY ASSET ALLOCATION DISTRIBUTION

As of June 30, 2022 • Percent (%) • n = 158

	Public Equity	PE/VC	Hedge Funds	Real Assets & ILBs	Fixed Income	Private Credit	Cash	Other
5th %ile	62.0	42.3	29.9	17.4	15.3	6.5	9.7	2.4
25th %ile	44.4	33.5	21.2	12.5	10.0	3.3	4.6	0.0
Median	34.8	26.5	15.7	8.5	6.3	1.7	2.8	0.0
75th %ile	25.1	17.3	11.4	4.7	3.6	0.0	1.3	0.0
95th %ile	17.1	4.9	2.7	1.7	0.0	0.0	0.0	0.0
Mean	35.8	25.6	16.2	8.9	7.2	2.2	3.5	0.6

Source: College and university data as reported to Cambridge Associates LLC.

MEAN ASSET ALLOCATION BY ASSET SIZE

As of June 30, 2022 • Percent (%)

		Asset Size				
	All C&Us	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B
	(n = 158)	*(n = 17)*	*(n = 33)*	*(n = 20)*	*(n = 47)*	*(n = 41)*
Public Equity	**35.8**	**52.7**	**43.8**	**40.7**	**30.1**	**26.7**
Global	6.9	10.4	9.0	3.0	7.6	4.9
US	16.1	23.4	21.8	22.2	11.9	10.5
Global ex US Developed	8.1	14.1	8.9	11.1	6.4	5.3
Emerging Markets	4.7	4.9	4.1	4.5	4.2	5.9
PE/VC	**25.6**	**10.8**	**19.3**	**21.2**	**30.2**	**33.7**
Non-Venture Private Equity	11.2	2.6	7.5	10.1	14.9	14.1
Venture Capital	12.1	5.5	7.8	8.6	14.2	17.4
Other Private Investments	2.3	2.7	3.9	2.5	1.0	2.2
Hedge Funds	**16.2**	**13.7**	**15.0**	**14.1**	**18.2**	**17.0**
Long/Short	6.5	5.1	6.1	4.3	7.5	7.4
Absolute Return	8.6	8.1	8.2	8.1	9.0	8.8
Distressed	1.1	0.4	0.7	1.7	1.7	0.7
Private Credit	**2.2**	**1.0**	**1.8**	**2.9**	**2.6**	**2.2**
Distressed - Control Oriented	0.8	0.3	0.8	1.1	0.8	1.0
Private Credit ex Distressed	1.4	0.7	1.1	1.7	1.8	1.2
Fixed Income	**7.2**	**12.2**	**9.4**	**8.6**	**5.8**	**4.2**
Global	0.1	0.0	0.0	0.4	0.2	0.1
US	6.8	12.2	9.3	8.1	5.4	3.6
Global ex US	0.0	0.0	0.0	0.0	0.0	0.1
High-Yield Bonds	0.2	0.0	0.0	0.1	0.2	0.5
Real Assets & ILBs	**8.9**	**5.1**	**5.8**	**9.1**	**9.3**	**12.5**
Private Real Estate	3.4	0.9	1.3	3.7	3.8	5.4
Public Real Estate	0.5	0.4	0.5	1.2	0.4	0.4
Commodities	0.4	0.1	0.3	0.4	0.2	0.8
Inflation Linked-Bonds	0.4	0.5	0.8	0.5	0.2	0.3
Private O&G/Nat Resources	3.6	1.8	2.1	2.5	4.1	5.3
Public Energy/Nat Resources	0.7	1.5	0.8	0.8	0.6	0.3
Cash & Equivalents	**3.5**	**3.5**	**3.7**	**3.2**	**3.7**	**3.2**
Other Assets	**0.6**	**1.0**	**1.2**	**0.2**	**0.1**	**0.5**

Source: College and university data as reported to Cambridge Associates LLC.

HISTORICAL MEAN ASSET ALLOCATION TRENDS

Years Ended June 30 • Percent (%)

	Constant Universe (n = 82)							
	Public Equity	PE/VC	Hedge Funds	Real Assets & ILBs	Fixed Income	Private Credit	Cash	Other
2002	47.9	7.0	14.4	6.2	21.4	--	2.5	0.6
2003	47.2	6.8	17.0	7.6	18.2	--	2.4	0.7
2004	47.6	7.1	18.8	7.8	14.6	--	2.9	1.1
2005	45.7	7.6	20.5	9.4	13.5	--	2.9	0.4
2006	45.2	8.4	21.4	10.6	11.7	--	2.5	0.3
2007	45.0	9.5	21.9	11.3	9.9	--	2.3	0.1
2008	38.0	11.8	23.6	14.0	10.7	--	1.5	0.3
2009	30.9	13.3	24.5	13.2	12.9	--	4.6	0.6
2010	31.5	14.3	25.8	13.5	11.8	--	2.7	0.4
2011	33.8	14.8	24.0	14.3	10.0	--	2.6	0.6
2012	32.6	14.8	24.5	14.8	10.4	--	2.6	0.3
2013	36.1	13.4	22.4	13.8	9.1	1.9	2.9	0.4
2014	38.4	13.3	21.8	13.2	8.0	1.7	3.3	0.3
2015	38.5	13.7	22.9	11.6	8.0	1.6	3.6	0.2
2016	38.0	14.0	22.3	12.3	8.1	1.7	3.4	0.2
2017	40.2	13.9	20.7	11.6	7.4	1.5	3.8	0.9
2018	39.5	15.2	20.3	11.7	7.4	1.5	3.2	1.2
2019	38.7	17.7	19.6	10.7	7.4	1.6	3.1	1.3
2020	37.9	20.2	19.2	9.1	6.6	1.7	3.7	1.5
2021	37.1	25.6	16.3	8.5	5.9	1.9	3.2	1.5
2022	32.0	28.1	16.9	10.2	6.3	2.1	3.6	0.8

Source: College and university data as reported to Cambridge Associates LLC.

Note: Analysis is based on a constant universe that includes 82 institutions that provided asset allocation data for each year from 2002 to 2022.

UNCALLED CAPITAL COMMITTED TO PRIVATE INVESTMENT FUNDS

As of June 30, 2022 • Percent (%) • By Percentile Ranking

Uncalled Capital Commitments as a Percentage of the Total LTIP

	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B
5th %ile	20.1	18.4	22.6	23.8	25.9
25th %ile	12.9	14.9	18.8	19.8	20.6
Median	7.9	12.3	14.1	16.8	18.8
75th %ile	2.3	8.9	12.9	13.2	15.2
95th %ile	1.1	5.2	7.7	8.3	11.2
Mean	8.7	12.2	15.1	16.3	19.6
n	*14*	*32*	*19*	*43*	*29*

Actual PI Allocation + Uncalled Capital Commitments as a Percentage of the Total LTIP

	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B
5th %ile	54.1	55.9	65.5	68.7	88.6
25th %ile	37.7	50.8	53.5	61.6	71.1
Median	24.4	34.5	47.9	55.5	65.6
75th %ile	14.1	25.7	35.0	51.2	61.1
95th %ile	4.8	17.5	25.7	47.2	50.0
Mean	26.0	36.8	45.4	56.3	67.4
n	*14*	*32*	*19*	*43*	*29*

Source: College and university data as reported to Cambridge Associates LLC.

Note: Uncalled capital is the amount committed, but not yet paid in, to private investment funds.

Appendix: Investment Manager Structures

NUMBER OF EXTERNAL MANAGERS AND INVESTMENT VEHICLES

As of June 30, 2022 • Percent (%) • By Percentile Ranking

Number of External Managers

	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B
5th %ile	54	77	93	120	281
25th %ile	46	63	77	102	190
Median	29	48	70	86	154
75th %ile	24	35	54	70	116
95th %ile	12	21	47	52	93
Mean	32	49	68	85	163
n	*17*	*33*	*19*	*41*	*27*

Number of Investment Vehicles

	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B
5th %ile	68	116	158	276	714
25th %ile	56	87	139	208	399
Median	43	72	106	160	349
75th %ile	27	51	86	133	245
95th %ile	13	39	65	92	204
Mean	41	72	113	168	359
n	*17*	*33*	*18*	*41*	*25*

Source: College and university data as reported to Cambridge Associates LLC.

DISPERSION IN NUMBER OF MANAGERS FOR SELECTED ASSET CLASSES

As of June 30, 2022 • By Percentile Ranking

	Global Equity	US Equity	DM ex US Equity	EM Equity	US Bonds	Long/Short Hedge Funds	Ab Return Hedge Funds	Private Equity	Venture Capital
5th %ile	9	10	7	8	4	13	14	47	41
25th %ile	5	6	4	4	3	8	9	27	20
Median	3	4	3	3	2	5	6	15	10
75th %ile	2	3	2	2	1	3	4	9	5
95th %ile	1	2	1	1	1	1	2	3	2
Mean	4	5	4	4	2	6	7	19	15
n	*100*	*131*	*123*	*130*	*116*	*124*	*127*	*131*	*131*

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Only those institutions with an allocation to the specific asset class have been included. Funds-of-funds are counted as one manager.

APPENDIX EXTERNAL MANAGERS AND VEHICLES BY STRATEGY

As of June 30, 2022

Strategy	Median Number of Managers					Median Number of Vehicles				
	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B	Less Than $200M	$200M–$500M	$500M–$1B	$1B–$3B	More Than $3B
Traditional Equity										
Global Equity	3	3	3	4	5	3	3	3	4	5
US Equity	5	4	5	4	7	5	4	5	4	7
Developed ex US Equity	4	3	3	3	5	4	3	3	3	5
Emerging Markets Equity	2	2	3	3	6	2	2	3	3	7
Traditional Bonds										
Global Bonds	--	1	2	1	2	--	1	2	1	2
US Bonds	2	2	2	1	1	2	2	2	2	2
Global ex US Bonds	--	1	1	1	1	--	1	1	1	1
High-Yield Bonds	--	1	--	1	2	--	1	--	1	2
Hedge Funds										
Long/Short Hedge Funds	2	4	4	6	9	2	4	4	6	10
Absolute Return	4	6	6	6	9	4	6	6	7	11
Distressed Securities	1	1	2	2	3	1	1	2	2	3
Private Credit										
Distressed - Control Oriented	1	1	3	4	5	1	2	3	5	9
Private Credit ex Distressed	2	2	6	5	8	2	3	9	8	12
Private Equity										
Non-Venture Private Equity	4	7	13	19	37	7	13	26	45	75
Venture Capital	4	5	8	14	34	8	11	17	40	102
Other Private Investments	3	4	5	4	4	3	7	7	6	9
Real Assets & ILBs										
Private Real Estate	2	2	6	7	17	3	2	10	15	33
Public Real Estate	1	1	1	1	3	1	1	1	1	3
Commodities	1	1	2	1	3	1	1	2	1	4
Inflation-Linked Bonds (TIPS)	1	1	1	1	1	1	1	1	1	1
Private Oil & Gas/Nat Res	1	3	6	7	12	3	5	10	15	28
Public Energy/Nat Res	1	1	1	1	2	1	1	1	1	2
Cash	1	1	1	1	1	2	1	1	1	1
Other	1	1	1	1	1	1	1	2	1	3

Source: College and university data as reported to Cambridge Associates LLC.

Notes: Only those institutions with an allocation to the specific asset class are included in each category. As a result, the sum of the individual asset classes should not be assumed to equal the total number of managers or vehicles.

Appendix: Institutional Support

ENDOWMENT DEPENDENCE

Fiscal Year 2022 • Percent (%) • By Percentile Ranking

	Private Institutions	Public Institutions
5th %ile	53.5	9.2
25th %ile	29.1	6.4
Median	14.1	3.8
75th %ile	7.9	2.7
95th %ile	2.3	1.8
Mean	19.8	4.8
n	*80*	*12*

Source: College and university data as reported to Cambridge Associates LLC.

ENDOWMENT TO DEBT

As of June 30, 2022 • n = 93

	Less Than $2B	$2B–$5B	More Than $5B
5th %ile	9.4	13.7	13.7
25th %ile	5.0	7.3	7.9
Median	3.5	5.2	4.7
75th %ile	2.3	2.3	3.8
95th %ile	1.2	1.6	1.9
Mean	4.1	6.1	5.8
n	*49*	*18*	*26*

Source: College and university data as reported to Cambridge Associates LLC.

PARTICIPANTS

University of Alaska Foundation
Allegheny College
American Coll of Greece & American Univ of Greece
Amherst College
University of Arkansas Foundation Inc.
College of The Atlantic
Bentley University
Berkeley Endowment Management Company
Boston College
Boston University
Bowdoin College
Brown University
Bryn Mawr College
University of California
California Institute of Technology
The UCLA Foundation
University of California, San Francisco
Canisius College
Carleton College
Carnegie Mellon University
Case Western Reserve University
Centenary College of Louisiana
Chapman University
The University of Chicago
University of Cincinnati
Claremont McKenna College
Clemson University Foundation
The Colburn School
Colby College
Colgate University
Columbia University
Connecticut College
Cooper Union for the Advancement of Science & Art
Cornell University
College For Creative Studies
Curry College
Dartmouth College
Davidson College
University of Delaware
Denison University
Duke University
Duquesne University
Emory University
Florida State University Foundation Inc.
University of Florida Investment Corporation
Georgia Tech Foundation Inc.
Gettysburg College
Goucher College
Grinnell College
Hampton University
Harvard Management Company, Inc.
Haverford College
University of Hawaii Foundation
Hollins University
Hope College
University of Houston System
Howard University
University of Idaho Foundation, Inc.
University of Illinois Foundation
Indiana University Foundation
Iowa State University Foundation
Jewish Theological Seminary of America
Johns Hopkins University
Kalamazoo College
KU Endowment
Kentucky, University of
Lafayette College
University of Louisiana at Lafayette Foundation
Lebanese American University
Lehigh University
Lewis and Clark College
Louisiana State University Foundation
Loyola University of Chicago
Luther Seminary
Lycoming College
Macalester College
The University of Maryland Foundation
MIT Investment Management Company
Mercy College
University of Michigan
Michigan State University
Mount Holyoke College
Mount St. Mary's University
National University
NC State Investment Fund, Inc.
University of Nevada, Reno Foundation
Nevada System of Higher Education
New York University
Northeastern University
Northwestern University
Norwich University
University of Notre Dame
Oberlin College
Occidental College
Ohio State University
Ohio Wesleyan University
The University of Oklahoma Foundation, Inc.
Pace University
University of the Pacific
University of Pennsylvania
Pennsylvania State University
Pepperdine University
University of Pittsburgh
Pomona College
Princeton University
Providence College
Purdue Research Foundation
Reed College
Rensselaer Polytechnic Institute
University of Rhode Island Foundation
Rice University
University of Rochester
The Rockefeller University
University of San Diego
San Francisco State University Foundation
Santa Clara University
Scripps College
Seattle University
Simmons College
Smith College
Soka University of America
University of Southern California
Southern Methodist University
Southern New Hampshire University
Spelman College
Stanford University
St. Lawrence University
Swarthmore College
University of Tennessee
Texas Christian University
Texas Lutheran University
Texas State Univ. Dev. Fdn.
The University of Texas Investment Management Co.
Trinity University

Tufts University
Tulane University
UNC Management Company, Inc.
UNCG Endowment Partners, LP
Union Theological Seminary
University at Buffalo Foundation
Vanderbilt University
Villanova University
University of Virginia Investment Management Co.
Virginia Tech Foundation
Washburn University Foundation
University of Washington
Washington College
Washington and Jefferson College
Washington University in St. Louis
Wellesley College
Wesleyan University
Western New England University
Wichita State University Foundation
William & Mary Foundation
Williams College
University of Wisconsin Foundation
Yale University
Yeshiva University